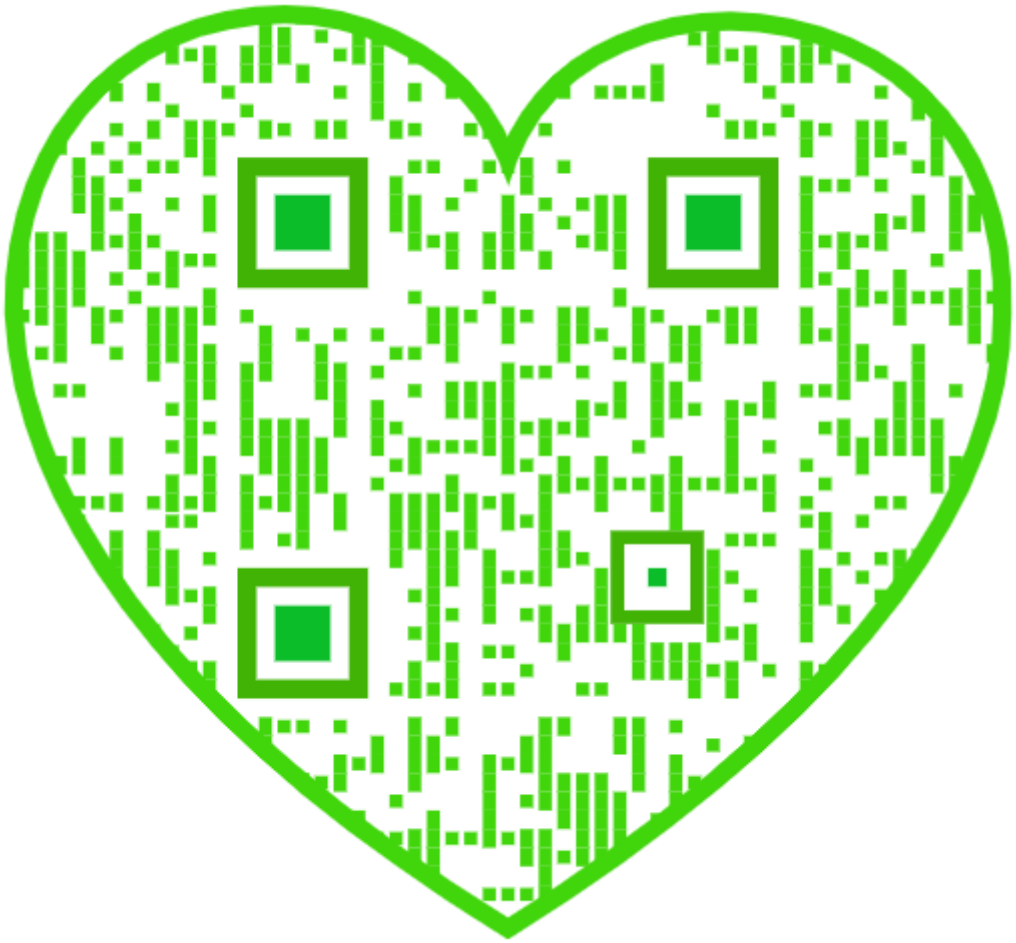

The ARCHITECT AND ENGINEER

OCTOBER
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WHO'S WHO IN THIS ISSUE

ROBERT GORDON SPROUL, who writes the Foreword in this number of **The Architect and Engineer**, is the eleventh President of the University of California. Dr. Sproul was born in San Francisco, May 22, 1891. He is the son of Robert and Sarah Elizabeth (Moore) Sproul. He received his early education in the public schools of San Francisco, and was awarded the degree Bachelor of Science, University of California, on May 11, 1913. Occidental College, Los Angeles, honored Mr. Sproul in 1926 with the degree Doctor of Laws, and the University of Southern California likewise honored him in 1920. On September 6, 1916, he married Ida Amelia Wittschen, of Oakland, California. They have three children—Marion Elizabeth, Robert Gordon and John Allan. Dr. Sproul began his career in the efficiency department of the city of Oakland, California, following his graduation from the University of California. He returned to the University in 1914, serving it continuously as cashier, assistant comptroller and assistant secretary of the Regents; comptroller, secretary of the Regents and land agent. In 1925 he became a vice-president of the University, and on June 11, 1929, he was elected President, effective July 1, 1930. Dr. Sproul has served as general manager of the Bear Gulch Water Company, director of the Berkeley Guarantee Building and Loan Association and president of the Berkeley Community Chest. He is now a member of the Commission on Revision of the California State Constitution, and the California State Board of Social Welfare, director of International House at the University of California, Berkeley, of the Y. M. C. A. and of the California Conference of Social Work, treasurer of the E. Charles Fleischner Endowment Fund, and of the Save the Redwoods League and trustee of the Pacific School of Religion. He is a life member of the Pacific Geographic Society, a member of Phi Beta Kappa and Tau Beta Pi, and an honorary member of the Playground and Recreation Association of America. Dr. Sproul is a member of the following clubs: Bohemian, University, Faculty, Claremont and Berkeley. Although a lover of nature and an enthusiast for mountain climbing, fishing and tennis, Dr. Sproul's chief recreation is in books, especially books dealing with history and political science.

GEORGE W. KELHAM, Supervising Architect of the University of California, was born in Manchester, Massachusetts. He studied architecture at Harvard University, Paris and Rome. He practiced the profession in New York City from 1898 to 1908, coming to San Francisco in 1906 to supervise construction of the Palace Hotel. Mr. Kelham served as Chief in the Department of Architecture of the Panama Pacific International Exposition, 1912-1915. Upon the retirement of John Galen Howard he was appointed Supervising Architect for the University of California. Among the notable buildings designed by his office are the following: American Bank, Anglo & London-Paris National Bank, Balfour-Guthrie, California Commercial Union, California State Automobile Association, Federal Reserve Bank, Medico-Dental, Walton N. Moore, Russ, San Francisco Public Library, San Francisco Golf and Country Club, Sharon Estate, Standard Oil in San Francisco and Los Angeles; Claremont Country Club, Oakland; Central National Bank Building, Oakland, and the Continental National Bank, Salt Lake City. Mr. Kelham is a member of the San Francisco Chapter, A. I. A., Beaux Arts Architects of New York and Pacific Union Club, San Francisco. During the war he served as a member of Company K, Seventh Regiment, National Guard, New York.

ARTHUR BROWN, JR., membre de l'Institut de France, F. A. I. A., who designed the new Infirmary Building at the University of California, Berkeley, is a native of Oakland, California. He was graduated with a degree of B. S. in Civil Engineering, University of California, in 1896, and of the Ecole des Beaux Arts, Paris, in 1901. He was associated with John Bakewell, Jr., when this firm attained national recognition as winners of the San Francisco City Hall competition. Mr. Brown served as Associate Architect for the Panama Pacific International Exposition; Lecturer in Architecture at Harvard University, 1918, and acting Professor of Theory of Architecture at the University of California, 1918-1919. He was appointed a member of the Board of Architectural Consultants of the Treasury Department, Washington, D. C., in 1927, and was recently commissioned to design the new Federal Building in San Francisco, as well as buildings for the Labor Department and Interstate Commerce Commission in Washington, D. C. He is a member of the Architectural Commission of the Chicago Worlds Fair Centennial Celebration, 1933. Mr. Brown is a member of Beta Theta Pi and Chevalier Legion d'Honneur (France). He is also a member of the University, Pacific Union, Olympic and Burlingame Country Clubs.

WILLIAM C. HAYS, architect of Giannini Hall, University of California, was born in Philadelphia. He graduated from the University of Pennsylvania, won the John Stewardson Memorial Traveling Fellowship and did post graduate work at Rome (American Academy) and at Paris in the Ateliers of Godefroy-Freynet and Laloux. His initial building, Houston Hall at the University of Pennsylvania, the first "Students' Union" in the United States, was won in competition jointly with the late Milton Bennett Medary, Jr., shortly after their graduation from college. Returning from his studies abroad, and after two years of office experience, he began practice in Philadelphia, and at one time had works under way simultaneously in Maine, Florida and Minnesota. Mr. Hays came to San Francisco in September, 1904, to join John Galen Howard; was a junior member of Howard and Galloway from 1906 to 1908, and since that time has practiced independently. He has taught architectural design at Pennsylvania and since 1906 has been on the staff at California, now holding the rank of Professor of Architecture. In addition to Giannini Hall on the Berkeley Campus, Mr. Hays has executed commissions for the University of California on the Campus at Davis, for which he is Supervising Architect. Among these are the Dairy Industry, Horticulture, Agricultural Engineering, Animal Science buildings and the Central Heating Plant. He is Consulting Architect for the San Francisco Campus, comprising the Medical and Dental School group. In a varied practice he has built churches, among them the First Presbyterian in San Francisco and in Oakland, and numerous public and private schools, including those constructed under the last school bond issue in Berkeley. Having begun practice with a college building, he has designed or worked upon buildings for the Universities of Pennsylvania, Princeton, Bryn Mawr, Stetson (at DeLand, Florida), Washington (at St. Louis), and Washington State, in addition to the University of California. His writings have been frequently published in such magazines as **The Architect and Engineer**, to which he is a regular contributor, and The Brickbuilder, Architectural Forum.

Pencil Points, Current Literature, The Bookman (all of New York), and Cathedral Age, Washington, D.C. Mr. Hays holds memberships in the American Institute of Architects, Society of Beaux Arts Architects, Alumni of the American Academy at Rome, T-Square Club of Philadelphia (twice president), honorary member Tau Sigma Delta and Delta Sigma Chi, past member Cercolo Artistico Internazionale of Rome. He was made a Fellow of the American Institute of Architects at the meeting of that body in Washington, D. C., this year.

ALLISON & ALLISON, architects, have been associated in the practice of their profession in Los Angeles for the past twenty years, coming West from Pittsburgh, Pa., where they formed their partnership in 1906. **J. E. Allison,** the senior member, received his early training in various offices in Pittsburgh, and with Adler & Sullivan, of Chicago. He was elected to Fellowship in the Institute some years ago, is a past president of the Los Angeles Chapter, and has been actively interested for many years in Institute, Chapter and legislative matters in the state. **D. C. Allison** studied architecture at the University of Pennsylvania and abroad before joining his brother in Pittsburgh. He is also a Fellow in the Institute and a past president of the Los Angeles Chapter. Since locating in Los Angeles the firm has designed many buildings of a public and semi-public character, among which in Los Angeles are the University Club, the Women's Athletic Club, the Friday Morning Club, the First Baptist Church, the First Unitarian Church, the Wilshire Congregational Church, the First Congregational Church, an office building for the Southern California Edison Company, now under construction, and a large number of educational buildings throughout the state, among which are the Palo Alto High School, the Santa Monica High School, the original University of California at Los Angeles on Vermont Avenue, and certain buildings on the new campus of the University of California at Los Angeles, done in collaboration with George W. Kelham as Supervising Architect for the University.

HENRY J. BRUNNIER, Structural Engineer of the University of California buildings, was born on a farm near Manning, Iowa, November 26, 1882. He was graduated from the high school in Manning and spent vacations working at various building trades. He was given the degree of Civil Engineer at the Iowa State College in 1904. In 1908 Mr. Brunnier opened an office for the practice of his profession in San Francisco. Since 1908 Mr. Brunnier has been the designing and consulting structural engineer for many large structures in the West and the Hawaiian Islands, including the Russ Building, Standard Oil Building, Hunter-Dulin Building, Commercial Union Building, Federal Reserve Bank, Balfour Building, Shell Building, Hills Bros. Plant and many others in San Francsico; in Los Angeles the Examiner and Standard Oil Buildings, the California Club, the University of California at Los Angeles buildings and others. Mr. Brunnier was in charge of the designing of the San Francisco waterfront structures for the State Board of Harbor Commissioners in 1909 and 1910, and in 1915 and 1916 was Consulting Engineer for the Chairman of the Harbor Commission in the Hawaiian Islands. In 1918 he served as principal assistant of the concrete ship section of the United States Engineering Fleet, having charge of the construction of the concrete ships and concrete shipyards, a $60,000,000 program. He is a member of the Tau Beta Phi, Honorary Engineering fraternity, of the American Society of Civil Engineers, Past President of the Pacific Association of Consulting Engineers, the Association of Port Authorities, the Concrete Institute and President of the Structural Engineers Association of Northern California.

THOMAS B. HUNTER of Hunter & Hudson, consulting engineers, San Francisco and Los Angeles. (See **Architect and Engineer** for July, 1930.)

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Photo by Roger Sturtevant

LIFE SCIENCE BUILDING, UNIVERSITY OF CALIFORNIA, BERKELEY

GEORGE W. KELHAM, ARCHITECT

The ARCHITECT AND ENGINEER

VOLUME CIII OCTOBER, 1930 NUMBER ONE

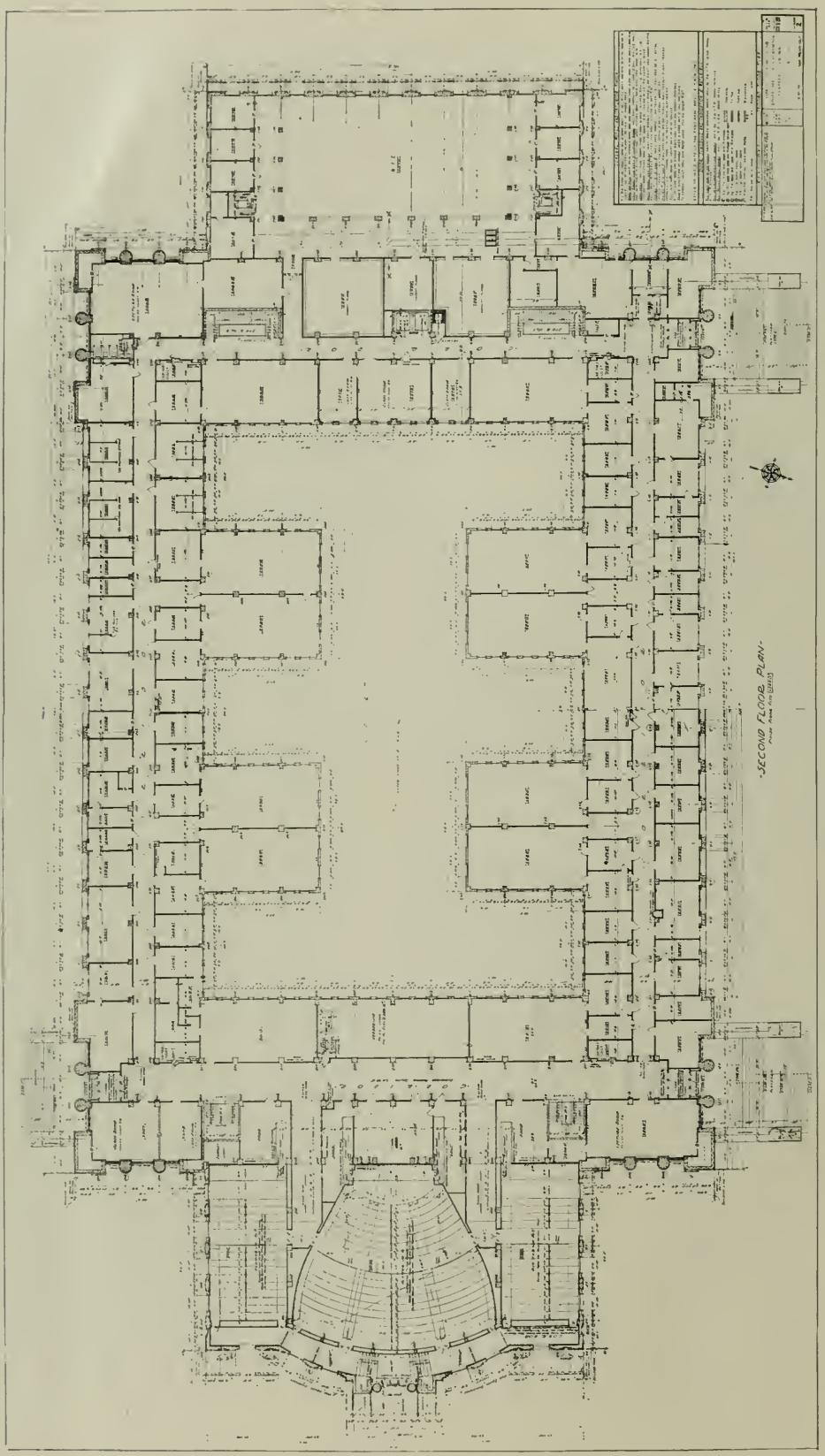
THE ARCHITECT AND THE UNIVERSITY

BY ROBERT GORDON SPROUL,
President University of California

AN ARCHITECT is not often thought of as an educator. Yet the architect who designs buildings for a college or university shares with its faculty the opportunity of developing within the student an appreciation of the finer values of life. Garfield once said that a log with Mark Hopkins on one end of it and a student on the other would constitute a university. His implication was true: the greatest need of the average student is an inspired teacher; and, it may well be added, the work of even the most inspired teacher cannot help but be facilitated by a well planned and harmonious background. Teacher and student are building character, as well as training the young mind in the delicate nuances of discrimination which mark the educated man. The buildings in which the developing student spends the greater part of his days while at college are a part of the host of experiences from which he must draw the material for the structure of his inner life.

Inspiration to great achievement is received through familiarity with and appreciation of the great achievements of others. In no other field of endeavor, perhaps, have man's creative powers demonstrated so well their ability to work independently of an image or likeness afforded by visible nature, as in architecture. Man has created architectural design within himself. A building is, as Armand Silvestre put it, "matter moulded by mind." From such works, representative of no set rules but rather of human sense of proportion in mass and fitness in detail, a student must derive profit—if the works are done well.

I feel that the University of California and the University of California at Los Angeles have been exceedingly fortunate in the development of the architectural plans for their campuses. One of the few if not the only new concept that has been added to architectural practice in modern times is that of the contrivance of a convenient plan. Through the generosity of Mrs. Phoebe Apperson Hearst, the University of California was enabled to secure such a plan at an early stage in its developmental history. To my knowledge there never has been a competition among architects like unto the one that preceded the selection of the sketches of Monsieur Benard of France. From all parts of the world came preliminary sketches, 105 of them in number, for consideration by the judges. The winning design may truly be said to be the best of which the architectural world was capable



PLAN, LIFE SCIENCE BUILDING, UNIVERSITY OF CALIFORNIA, BERKELEY
GEORGE W. KELHAM, ARCHITECT

Dinwiddie Construction Company, Builders

LIFE SCIENCE BUILDING, UNIVERSITY OF CALIFORNIA, BERKELEY

GEORGE W. KELHAM, ARCHITECT

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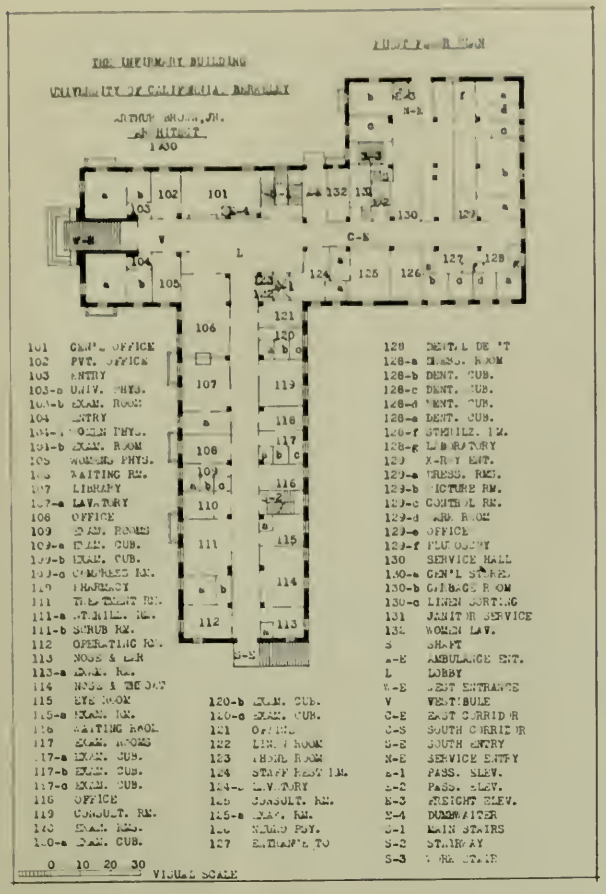
ENTRANCE, INFIRMARY, UNIVERSITY OF CALIFORNIA, BERKELEY

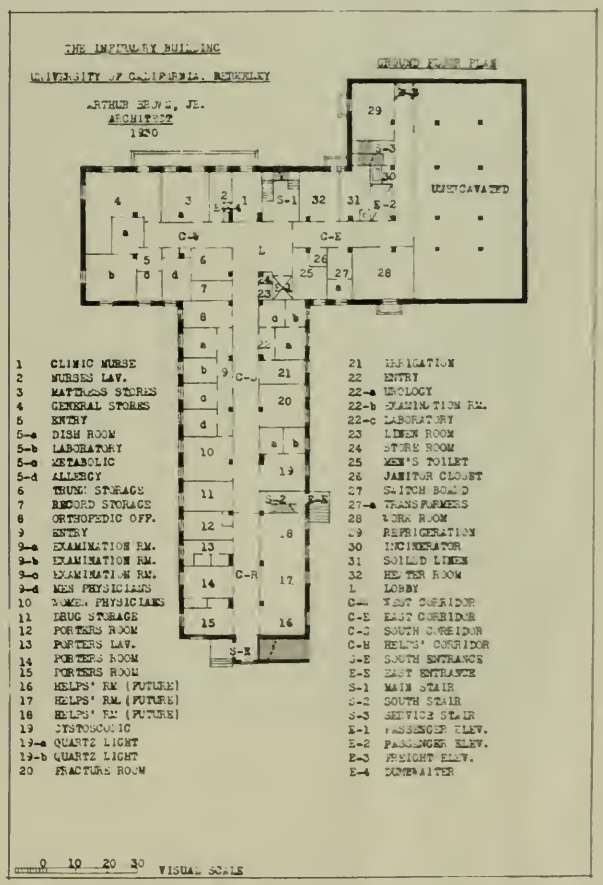
ARTHUR BROWN, JR., ARCHITECT

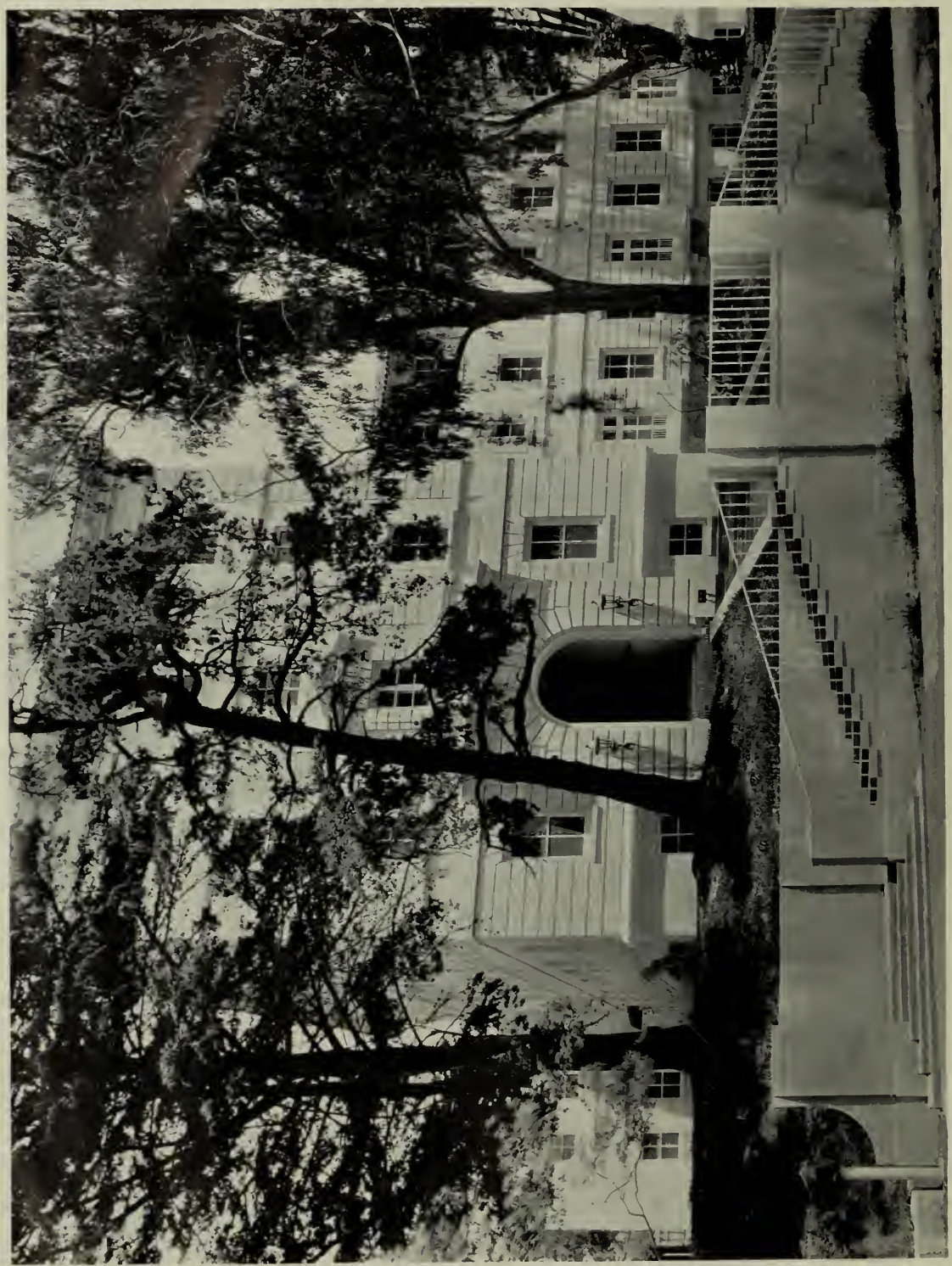


at the beginning of this century. With the necessary modifications, that plan has guided and will continue to guide the development of the Berkeley campus as an integrated unit. In thus boldly planning for centuries of future building, Mrs. Hearst made the University of California a subject of world-wide discussion.

At the time of the competition, Professor Charles Eliot Norton of Harvard, said: "The value of the influence of noble architecture, simple as it may be, at a great seat of learning, especially in our country, is hardly to be overestimated. The youth who lives surrounded by beautiful and dignified buildings to which inspiring memories belong, cannot but be strongly affected by the constant presence of objects that, while pleasing and refining the eye, cultivate his sense of beauty and arouse not merely poetic emotion but his sympathy with the spirit and generous efforts of his distant predecessors."

At Oxford that year of 1896, a Latin oration made reference to the University of California. In well-rounded Latin phrases the orator said: "To us Oxonians who bear uncomplainingly our poverty and lessened revenues there is brought a report that in California there is already established a university furnished with so great resources that even to the architects (a lavish kind of men) full permission has been given to spare no expense. Amidst the most pleasant hills on an elevated site, commanding a wide sea view, is to be placed a home of Universal Sciences and a seat of the muses. Here are to be arranged gardens planted with trees of every kind; here are to be built galleries, libraries, theaters, auditoriums; here must be gathered all incitements to learning, all appliances of art, hither will be summoned a multitude of professors and lecturers. It will scarcely be strange, I think, if our Academia adopt the words of Menelaus, deploring the changed fortunes and diminished resources of his house:





INFIRMARY BUILDING, UNIVERSITY OF CALIFORNIA, BERKELEY
ARTHUR BROWN, JR., ARCHITECT

Photo by Moulin

Photo by Sturtevant

DOME OF INTERNATIONAL HOUSE, BERKELEY

GEORGE W. KELHAM, ARCHITECT

'Would that I possessed a third of these things in my halls.' "

The University of California has been equally fortunate in its gift of a clean sweep of rolling hill land on which to plan and build a new campus. When the years of trial were ended and the new institution had more than justified its founding; when experience had shown that its future needs would far exceed its existing facilities, the slate was wiped clean and a fresh start made. In some respects the University of California at Los Angeles, possessed of the magnificent plan drawn by the University Architect, Mr. George W. Kelham, has been more fortunate than the Berkeley campus, for it is easier to plan and build for the future with no danger of breaking a spade on the foundations of the past.

We might well apply to the plans for both campuses of the University of California the words with which Mrs. Hearst made her offer of the International Competition some thirty-four years ago. "I have only one wish in this matter—that the plans adopted should be worthy of the great university whose material home they are to provide for; that they should harmonize with it, and even enhance the beauty of the site whereon this home is to be built; and that they should redound to the glory of the state whose culture and civilization are to be nursed and developed at its University;" for both represent the highest type of creative endeavor, and both have proved their worthiness in fulfilling the demands which Mrs. Hearst felt should be made.

Photo by Sturtevant

INTERNATIONAL HOUSE, UNIVERSITY OF CALIFORNIA, BERKELEY

George W. Kelham, Architect

But if I were to end here in stating why I feel that the University has been fortunate, only a half of the story would be told. The creation of these plans and their materialization in modified form and as living structures of brick and stone, has depended upon the architectural skill of many men, and they have done their work well.

Bernard Maybeck first gave tangible form to the idea of a comprehensive building plan for the Berkeley campus, and for

his efforts in bringing that plan into being, the University is greatly indebted. His hand, too, as well as that of Julia Morgan, has had an important part in the designing of the buildings which the comprehensive plan indicated.

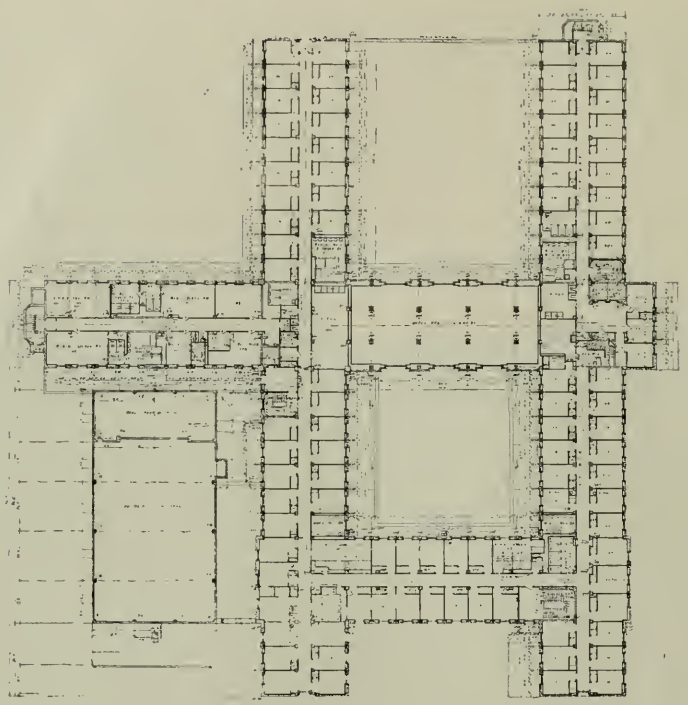
John Galen Howard, probably more than any other man, is responsible for the increasing beauty of the campus during the last two decades. With a fine independence, governed by an appreciation of the essentials of the Benard Plan, he has given to the campus a central group of buildings which will forever lend their flavor to the campus, and has set the seal of dignity, majesty, and strength upon the site. He has taken of the spirit of the French Renaissance, and builded better than did the exponents of that school.

In more recent years, particularly since the passage of the bond issue which gave the University of California six million dollars for building purposes, and which made possible the development of the new campus at Los Angeles and the replacement of many old shacks at Berkeley, not to mention improvements at Davis Farm and Riverside, the building policy of the University has been supported by such men as George W. Kelham, Allison and Allison, and William C. Hays. Under these architects the University has experienced, and is still experiencing one of the most extensive building periods in its history. Through the support of the citizenry of California, independently and as a commonwealth, the University is able more adequately to train the youth of the state, and more honestly to claim the eulogies of the Oxonian previously quoted. Through the co-operation of the architects mentioned, this physical development of plant has been accomplished with a commensurate increase in the beauty of the campus; therefore, we are assured that whatever profit may accrue from dwelling for a time in an environment endowed with the esthetic virtues, California students will be its inheritors.

Photo by Sturtevant

INTERNATIONAL HOUSE, UNIVERSITY OF CALIFORNIA, BERKELEY

George W. Kelham, Architect



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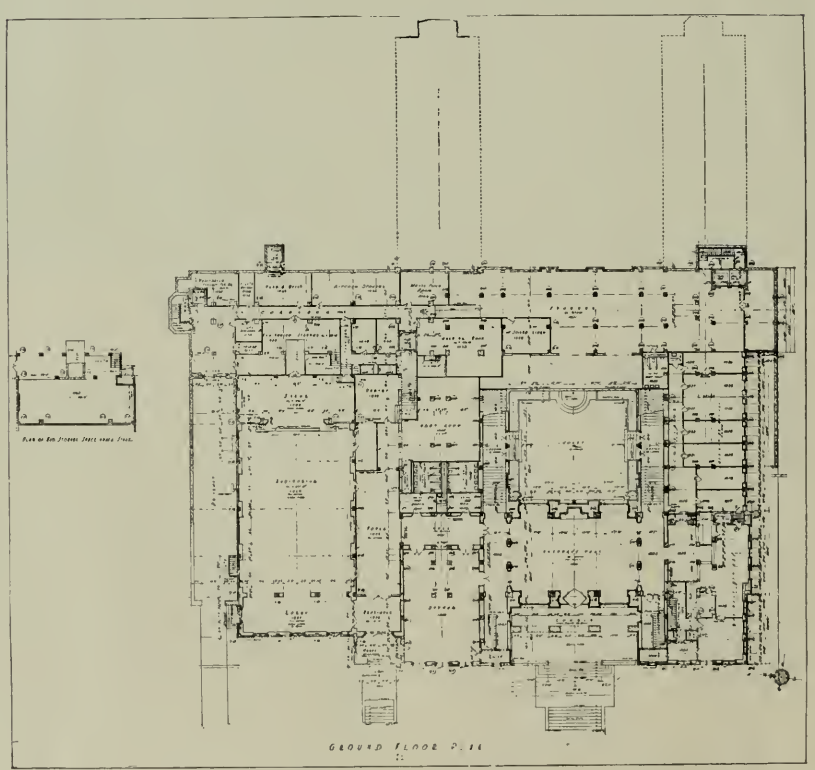

GROUND FLOOR

INTERNATIONAL HOUSE, UNIVERSITY OF CALIFORNIA, BERKELEY

GEORGE W. KELHAM, ARCHITECT

Photo by Sturtevant

COURT, INTERNATIONAL HOUSE, BERKELEY

GEORGE W. KELHAM, ARCHITECT

ENTRANCE HALL (left)

GREAT HALL (right)

AUDITORIUM

INTERNATIONAL HOUSE, UNIVERSITY OF CALIFORNIA, BERKELEY

GEORGE W. KELHAM, ARCHITECT

Photo by Sturtevant

BOWLES HALL, UNIVERSITY OF CALIFORNIA, BERKELEY

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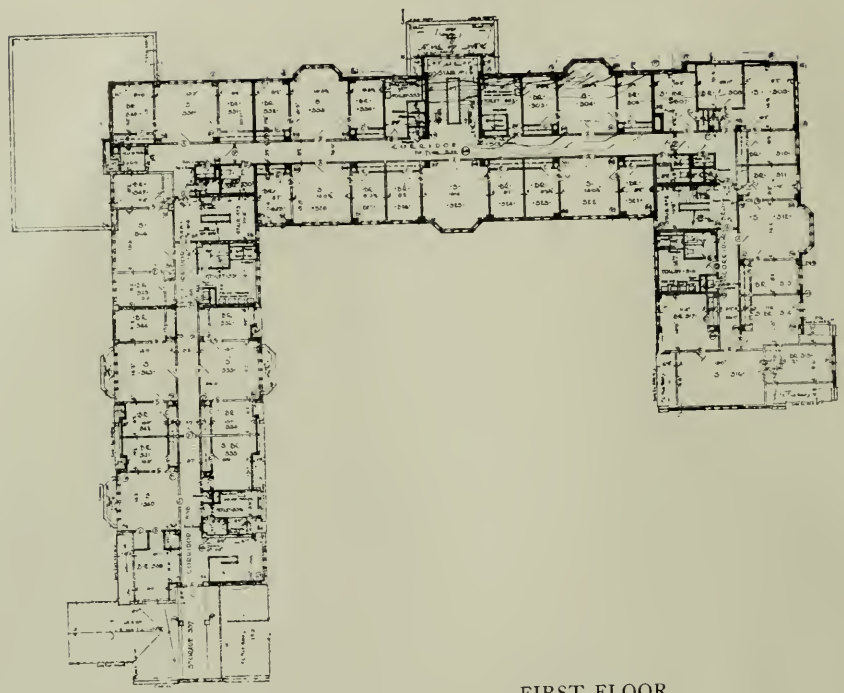

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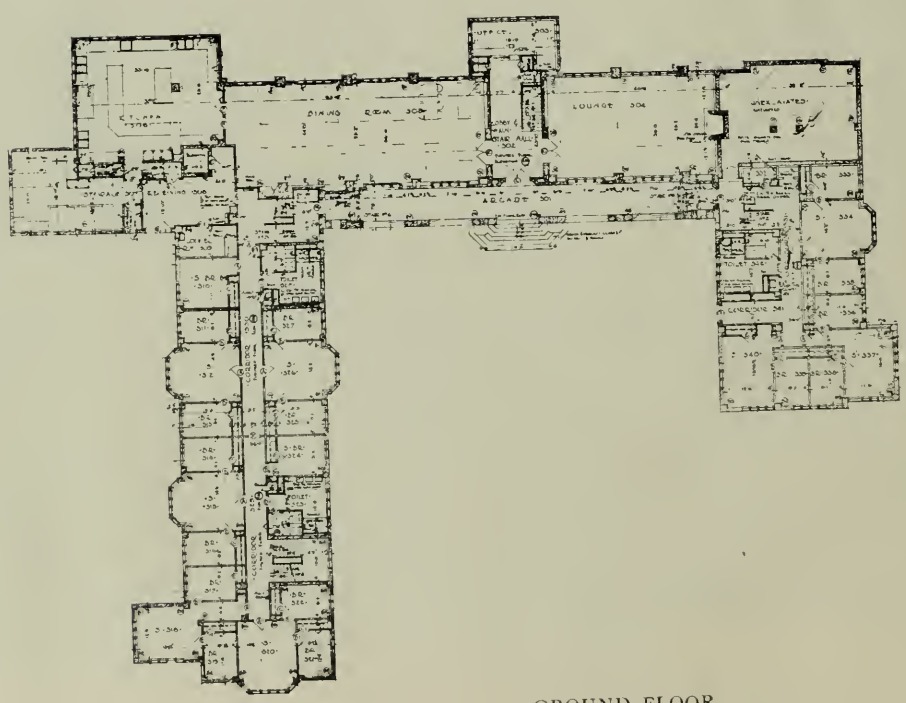

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GEORGE W. KELHAM, ARCHITECT

BOWLES HALL, UNIVERSITY OF CALIFORNIA, BERKELEY
GEORGE W. KELHAM, ARCHITECT

GIANNINI HALL, UNIVERSITY OF CALIFORNIA, BERKELEY
WILLIAM C. HAYS, ARCHITECT

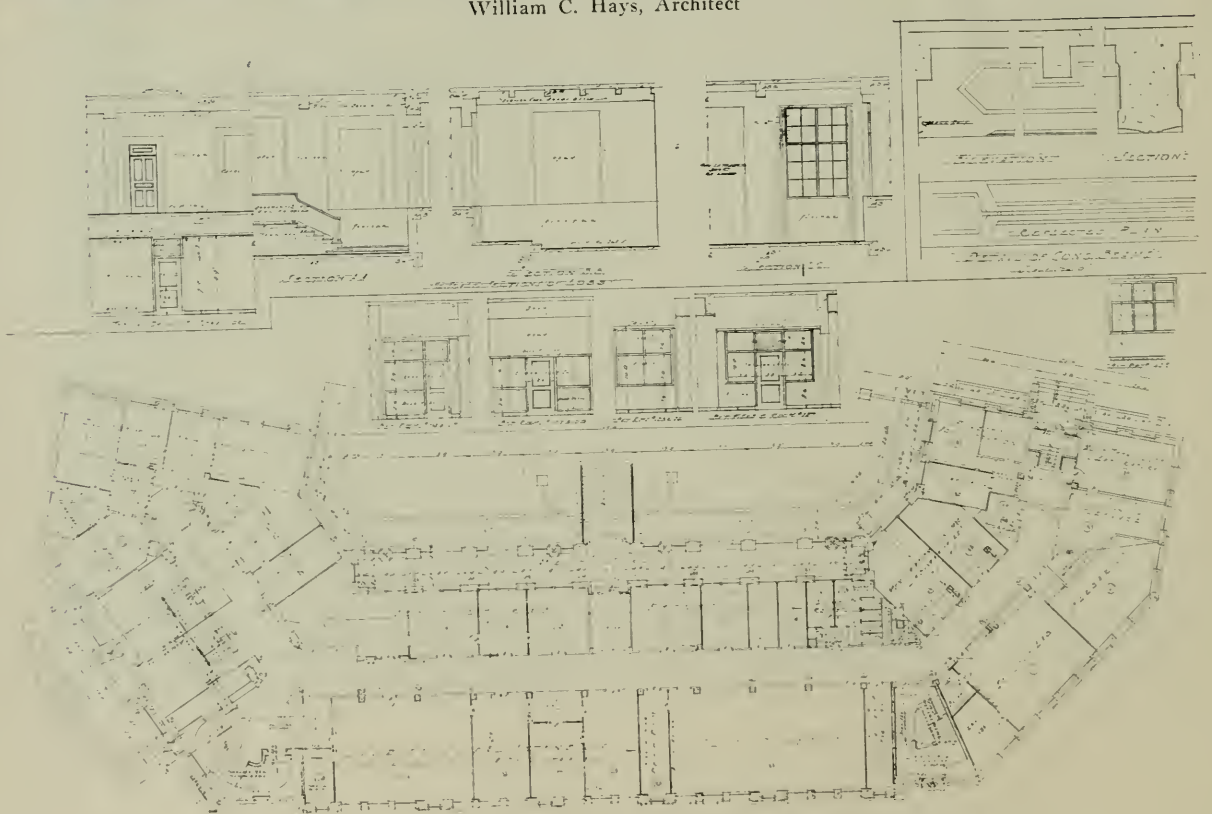
Photo by Benjamin F. White

Photo by Benjamin F. White

GIANNINI HALL, UNIVERSITY OF CALIFORNIA, BERKELEY

WILLIAM C. HAYS, ARCHITECT

GIANNINI HALL, UNIVERSITY OF CALIFORNIA, BERKELEY
William C. Hays, Architect



PLAN, GIANNINI HALL, UNIVERSITY OF CALIFORNIA, BERKELEY
William C. Hays, Architect

STRUCTURAL ASPECTS of UNIVERSITY BUILDINGS

BY HENRY J. BRUNNIER, C. E.

IN the fall of 1926 an extensive building program was outlined by the University of California, under the direction of George W. Kelham, Supervising Architect.

This embraced the construction of buildings necessary to remove the University of California at Los Angeles in its entirety to a new campus site located at Westwood, Los Angeles, and the erection of several new buildings at the Berkeley campus.

For uniformity in the design of these buildings, both at Westwood and Berkeley, a standard specification of loads and stresses was made and adopted, using in part, the Los Angeles and the San Francisco Building Codes with certain modifications in stresses, dictated by more recent recommendations of the Joint Committee for reinforced concrete and the American Institute of Steel Construction for structural steel.

Next in the matter of standardization, insofar as practicable, was the determination of bearing pressures on soils.

At Westwood, where construction was to be commenced immediately, borings were taken and load tests made to determine the safe bearing capacity of the soil. After exhaustive analysis, 6000 pounds per square foot was accepted as a safe carrying capacity of the soil at this site, as at a distance of from four to five feet below the surface, the soil structure was of uniform density, showing a minimum amount of variation.

At Berkeley, however, the soil at the various building sites was not uniform. Therefor it was found advisable to obtain soil borings and conduct tests at certain sites.

This condition was encountered on the site of the Life Science Building. All available data, authentic and otherwise, was collected. Maps of old streams, records of cuts and fills were gathered. Over an area of 250 feet by 500 feet, fifty-one test holes were drilled with a well drilling rig. These borings indicated impenetrable material at varying depths of from 15 to 60 feet below surface level. The uniformity of the slope of this material indicated an apparent sloping rock stratum. Considering it inadvisable to rest a building on compressible material of such extremely varying thickness, on account of the probable non-uniform settlement of the footings, a caisson foundation cut into and resting on this rock stratum was designed.

During the progress of the design, however, and inasmuch as a certain few borings still left a doubt as to their interpretation, further exploration was conducted. This took the form of open hole excavation to determine the nature of these obstructions to auger borings. These open holes were made directly over the auger holes in certain instances and at the depth of the obstruction, a stratum of gravel and man-size rock in clay formation was encountered.

This brought about a different aspect to the design of the foundations and a series of loading tests were made to determine the safe carrying capacity of the material underlying the top soil. With this data at hand an alternate foundation design was completed. In the design a comparatively low soil pressure was used on account of the

AIRPLANE VIEW, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
George W. Kelham, Supervising Architect

PLOT PLAN
UNIVERSITY OF CALIFORNIA
AT LOS ANGELES

George W. Kelham,
Supervising Architect

Photo by L. D. Barber

ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

ALLISON AND ALLISON, ARCHITECTS
GEORGE W. KELHAM, SUPERVISING ARCHITECT

ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
Allison and Allison, Architects; George W. Kelham, Supervising Architect

varying nature of the soil and as a further precaution, a continuous rib type foundation used, in order to beam over any pockets of poor material. The slight added cost of this type of foundation against the isolated pier type is an economical assurance against non-uniform settlement on this kind of soil.

The choice of the material of construction of the structural frame is determined by the framing requirements of the individual buildings.

While reinforced concrete is well adapted for these buildings, particularly so where this material is also used for the architectural exterior, use of structural steel is made where it is required by design or economy. The International House at Berkeley is an example of a reinforced concrete building with architectural exterior of concrete, wherein girders and columns of structural steel were included in the reinforced concrete to form a composite section.

In general, the frames of most of the buildings so far designed for the Westwood Campus are of reinforced concrete with exterior treatment of brick and terra cotta masonry. Herein again, structural steel is used for the roof and domes over the reading and delivery rooms of the Library Building, roof over the auditorium in the Chemistry Building and girders supporting class floors over the auditorium in the Education Building.

The use of concrete for the architectural exterior, referred to in a former paragraph, is exemplified in several buildings on the Berkeley campus, including the Life Science and International House. The former building has for its exterior a large number of classic columns and pilasters heretofore made in granite, stone or terra cotta. These are all cast-in-place concrete, as are also all the other ornamentations, such as the frieze, cresting, panels, etc. The successful construction of buildings of this

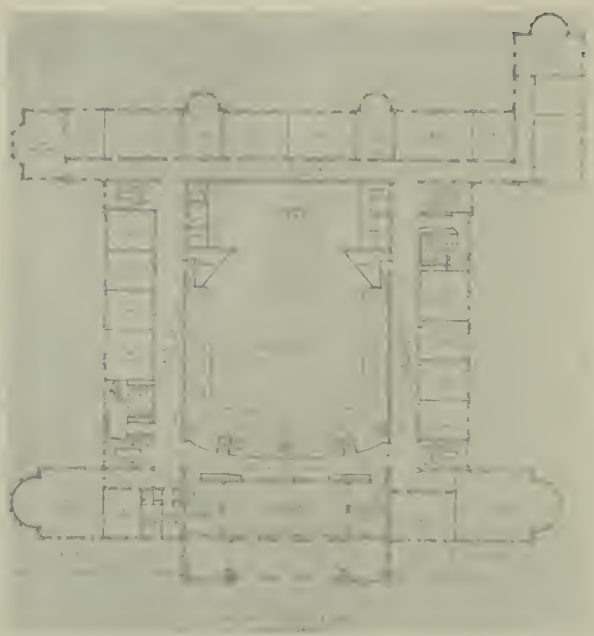
Editor's Note.—The pictures on Pages 55, 57, 63, 79 and 83 are presented by courtesy of Gladding, McBean & Co.

Photo by L. D. Barber

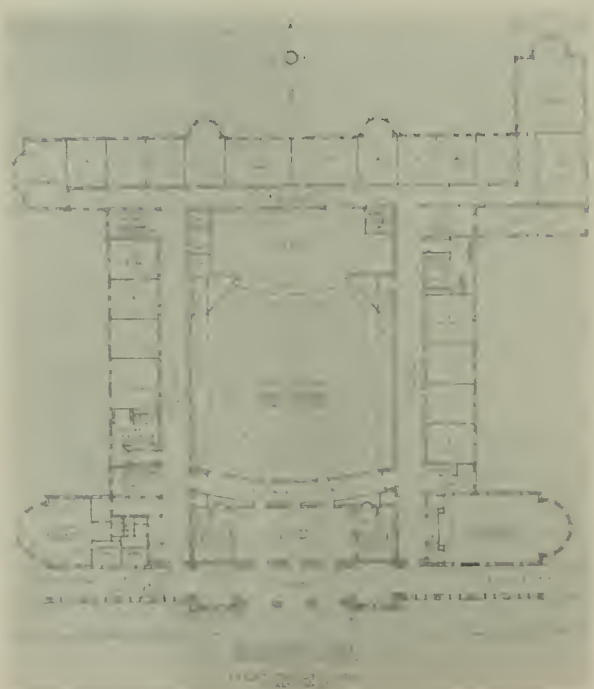
ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

ALLISON AND ALLISON, ARCHITECTS

GEORGE W. KELHAM, SUPERVISING ARCHITECT



SECOND FLOOR, ROYCE HALL
Allison and Allison, Architects
George W. Kelham, Supervising Architect



FIRST FLOOR, ROYCE HALL
Allison and Allison, Architects
George W. Kelham, Supervising Architect

type certainly brings forward the enormous possibilities of concrete as a medium for architectural expression. The use of concrete for this purpose while not in the immediate hands of the structural engineer, his cooperation in the design and the subsequent construction supervision is necessary to procure the best results.

While the architectural detail in the International House is not as profuse as in the Life Science Building it has been as essential to obtain the correct mix and resulting excellent concrete surface to produce the desired results.

The Engineering Building, one of three buildings of the Engineering Group which will shortly be under construction at the Berkeley Campus, is a structural steel frame building, the exterior of which in part will be granite faced and the balance of concrete. The Engineering Laboratory will be similar to the Life Science Building, that is, reinforced concrete frame and architectural exterior.

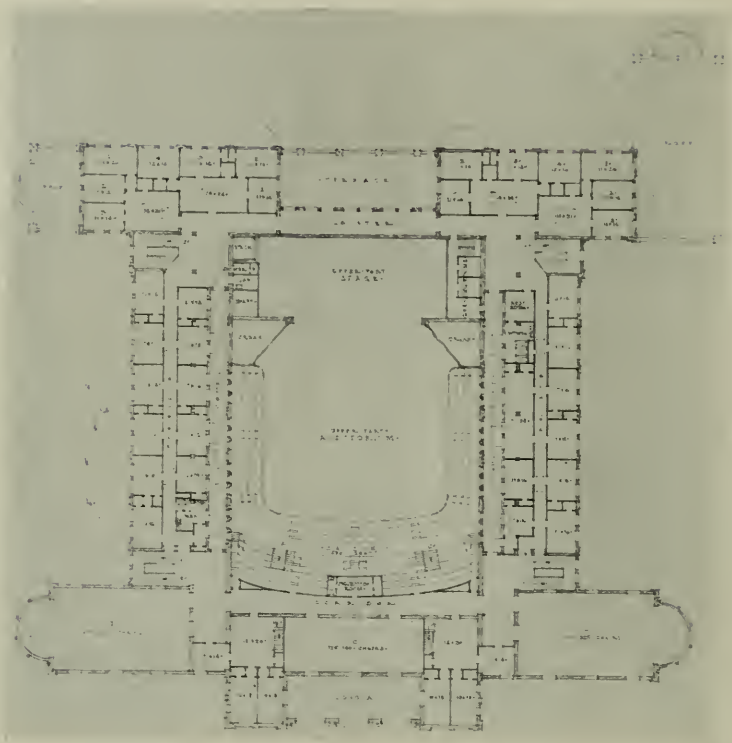
The specifications for lateral stresses require that frames be capable of resisting a minimum of 20 pounds a square foot of wind pressure. Buildings of three or four stories are but slightly affected by wind, except where unusual conditions are encountered which require consideration, such as the reading room of the Library Building with an average clear height of 45 feet from floor to roof, and an unsupported length of column of 30 feet.

Earthquake stresses, although not required by the specifications, are analysed and provided for in the frames. Generally, concrete filler walls, 8 or 10 inches thick or brick masonry walls, 13 inches or more in thickness, well laid and thoroughly anchored, in conjunction with the structural frame, have inherent strength to resist earthquake forces for buildings of heights of three or four stories. Frames in which filler walls are lacking or inadequate on account of architectural design, are investigated and strengthened accordingly. Conditions of heavy loadings, such as stack rooms of libraries, are especially scrutinized, not alone for stress analysis, but for details of construction as well.

ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

ALLISON AND ALLISON, ARCHITECTS

GEORGE W. KELHAM, SUPERVISING ARCHITECT



FOURTH FLOOR, ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Allison and Allison, Architects

George W. Kelham, Supervising Architect

The excellent and uniform concrete obtained throughout has been very gratifying. The strength of the concrete in the frames has been consistently above the average and the architecturally treated concrete exterior of the buildings at Berkeley have stripped remarkably well, although some exceptionally difficult forming and pouring was oftentimes encountered.

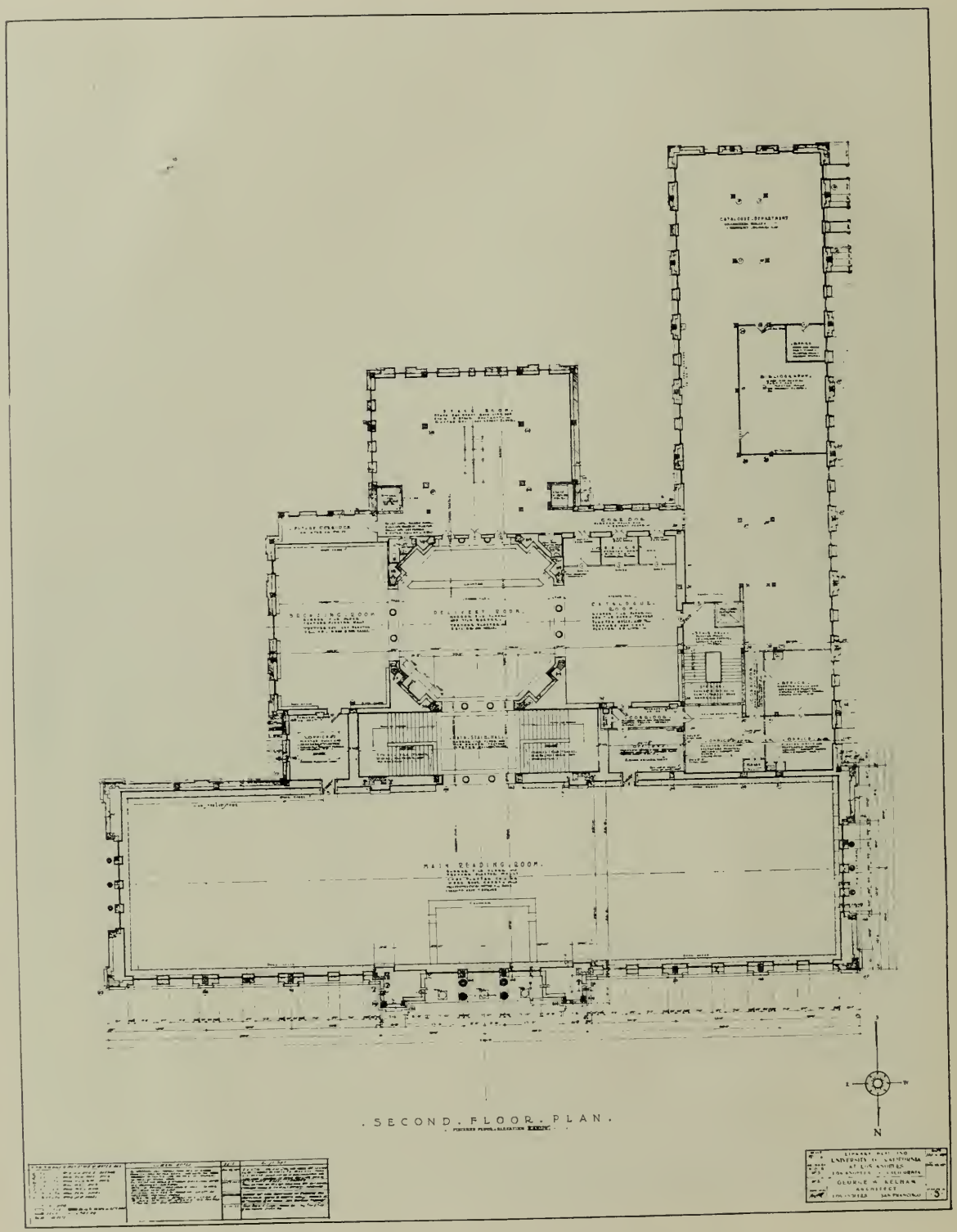
The several builders on these structures, without exception, have built soundly and their co-operation at all times have made it a pleasure to have been associated with them

CORRIDOR, ROYCE HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
ALLISON AND ALLISON, ARCHITECTS
GEORGE W. KELHAM, SUPERVISING ARCHITECT

Photo by L. D. Barber

LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT



LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

ENTRANCE, LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
GEORGE W. KELHAM, ARCHITECT

Photo by Starrett Studio

LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

Photo by Starrett Studio

LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

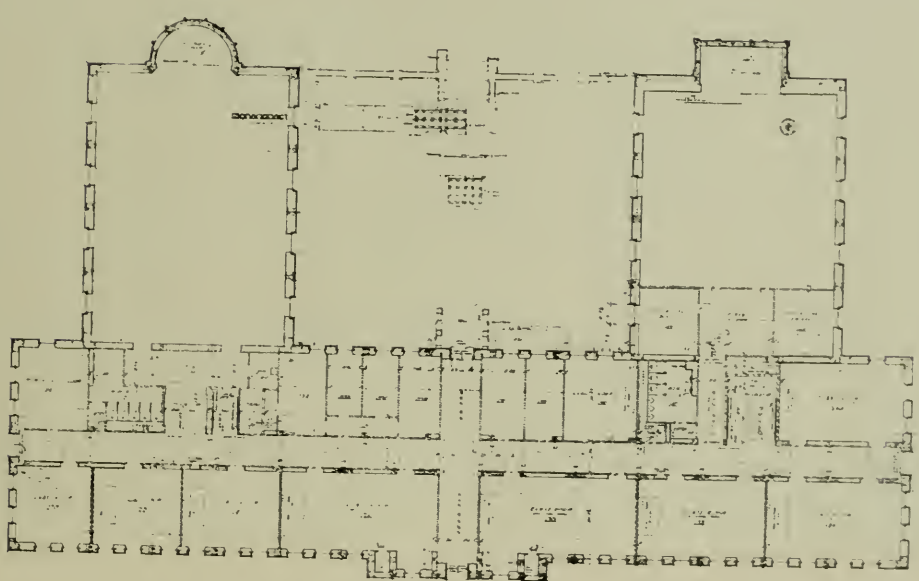
Photo by L. D. Barber

EDUCATION BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

EDUCATION BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

George W. Kelham, Architect



PLAN, EDUCATION BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

George W. Kelham, Architect

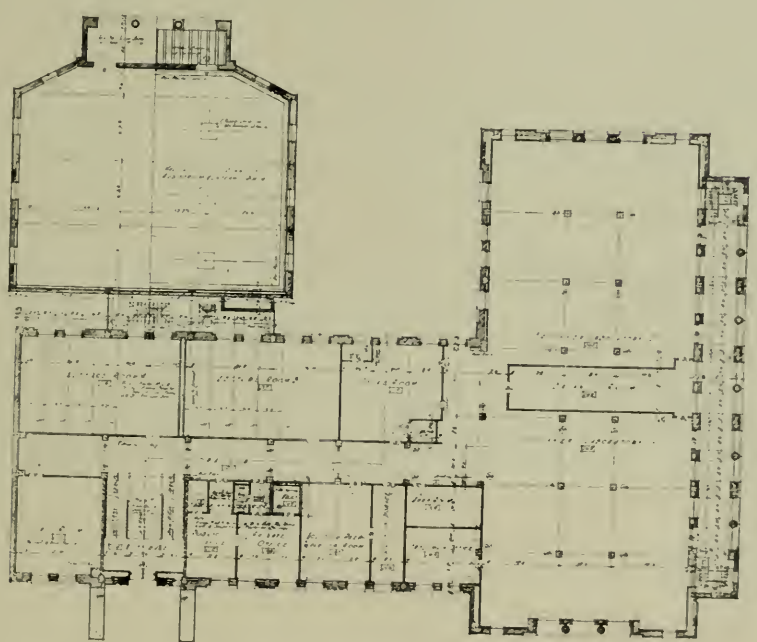
Photo by L. D. Barber

CHEMISTRY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

CHEMISTRY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

George W. Kelham, Architect



FIRST FLOOR

CHEMISTRY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

George W. Kelham, Architect

CHEMISTRY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

CHEMISTRY BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GEORGE W. KELHAM, ARCHITECT

PHYSICS BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

ALLISON AND ALLISON, ARCHITECTS
GEORGE W. KELHAM, SUPERVISING ARCHITECT

FEATURES OF MECHANICAL LAYOUT OF UNIVERSITY of CALIFORNIA BUILDINGS

BY THOMAS B. HUNTER, Consulting Engineer

IN planning the utilities for the new campus of the University of California at Los Angeles, the engineers were confronted with the unique problem presented by the construction of a complete university on an absolutely barren territory. Tentative plans had been prepared by the Supervising Architect, George W. Kelham, showing the arrangement and grouping of buildings which would at some future date house one of the largest universities in the country. The immediate construction program was limited by the funds available and provided for the initial construction of four buildings, a Class Room and Auditorium, Library, Physics, and Biology and Chemistry buildings. Construction commenced on these four structures, to which was added a fifth building housing the education department.

Due to the generosity of Mrs. Kerckhoff, funds were made available for the construction of a Students Union building which is at the present writing nearing completion.

The water supply, sewer system, electric distribution and steam heating systems were carefully studied to provide service for the completed university and all initial installations made to serve the buildings first constructed, were so designed as to fit in with the ultimate plan of the utilities for the great university that will become a reality in the very near future.

After consultation with the officials of the Bureau of Light & Power, serving the Westwood district, it was decided to install on the campus a 33 KV sub station, the University buying all electric current for light and power at 4600 volts. Due to the topography on the site of Royce Hall, which is the auditorium and class room building, it was possible to construct a boiler plant and electric sub station with a clear ceiling height of 29 feet. This location is as close to the center of the future load as it is possible to locate a utility building without marring the architectural ensemble of the group. Moreover this location is nearly the highest elevation on the campus.

SERVICE TUNNEL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

The 33,000-volt primary service to the electric sub station is brought in through the campus in an underground fibre duct conduit. This service is fitted with automatic double throw switches in the sub station near Sawtelle so that

the University is assured of constant service.

The primary distribution system on the campus consists of a series of 4600-volt primary feeders installed in underground fibre duct conduits terminating in underground reinforced concrete transformer vaults. One of these vaults is located in the basement of Royce Hall and will serve this building together with other buildings to be constructed in the area to the north and west. Due to the multiplicity of services in the Chemistry Building a separate vault with separate transformers has been installed for the service to this building. A third vault serves the Physics and Biology and Library buildings. The fourth installation contains the transformers that serve the Education Building, Kerckhoff Hall and other buildings that will be constructed to the south and east of them.

The main high tension switchboard located in Royce Hall consists of General Electric truck type switches controlling the 4600-volt underground feeders. In each of the buildings secondary switchboards have been installed controlling the feeders in the buildings to the motor control boards and lighting panel boards. A fifth vault has been constructed to house the transformers for the supply of electric energy to the Director's residence, which is being constructed close to Beverley Boulevard, near the north boundary of the campus.

A complete system of street lighting has been installed for the illumination of the grounds adjacent to the buildings now constructed and also the roads and walks. This is an underground 2200-volt series system of which three units have been installed. The transformers for the lighting system are installed in the above mentioned underground vaults, the operation of the street lighting system being controlled by time clocks.

Paralleling the underground high tension conduit system is a similar one for the telephone and signal systems. The main terminal room of the telephone system is located in Royce Hall with the switchboard in the Library Building. All telephone wir-

PHYSICS BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
Allison and Allison, Architects; George W. Kelham, Supervising Architect

ing from the switchboard to the various buildings has been installed in conduits, some underground and some in the service tunnels that connect the basements of the various buildings.

An electric time clock and program system was installed, the master clock with its auxiliary equipment being located in the boiler plant in Royce Hall. The wiring for this has been installed in conduit to the various buildings, providing a unified service for the class program systems.

The water supply for the University has been taken from the Stone Canon high pressure main, a 12-inch connection being made with a service pressure varying from 150 to 200 pounds. The high pressure piping system installed for fire protection and irrigation, consists of 12-inch, 8-inch and 6-inch, class 250, bell and spigot cast iron pipe. To these mains are connected two-way fire hydrants, located so that not less than four fire streams can be brought to any one building by the use of not more than 300 feet of hose. Connections to the irrigation and sprinkler system have been made to the high pressure piping through reducing pressure valves.

The so-called domestic water system of the University consists of a second system of cast iron mains, the water being supplied from the treatment plant installed in the boiler plant. An 8-inch connection from the high pressure system is made to this treatment plant which consists of a battery of Cochran Conical filters and California Filter Company's water softeners. This connection is fitted with reducing pressure valves, the domestic water being supplied to the various buildings under a pressure varying from 60 to 80 pounds. In each of the buildings additional batteries of reducing pressure valves were installed to reduce the pressure to the requirements of the individual buildings, this varying from 30 to 40 pounds.

Hot water for the various buildings is heated in a deaerating water heater, in the boiler plant and pumped through a system of pipes installed in the service tun-

PHYSICS BUILDING, UNIVERSITY OF CALIFORNIA AT LOS ANGELES
Allison and Allison, Architects; George W. Kelham, Supervising Architect

MENS' LOUNGE

PATIO ENTRANCE

KERCKHOFF HALL
University of California at Los Angeles
Allison & Allison, Architects · Geo. W. Kelham, Supervising Architect

Rendering by Austin Whittlesey

KERCKHOFF HALL, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Allison and Allison, Architects; George W. Kelham, Supervising Architect

nels to the various buildings. In order to provide circulation a return connection is made from each building to a common return line in the service tunnels, this, in turn discharging into the deaerators in the boiler plant.

In the design of the water supply systems all piping installed for the service of the present group of buildings has been of such size as will permit of the future extensions to the other sections of the campus as fast as the building construction requires additional service.

The sewer system of the University presented no unusual difficulties other than the installation of a rather long outfall sewer on Westwood Boulevard. Storm waters are cared for by surface drainage into the two natural drainage water courses, one running along the east side of the campus and one diagonally through the west section of the campus.

Drainage water is collected in catch basins installed in the road gutters, the outfall pipes in turn discharging into the above mentioned water courses. The roof drainage is collected in underground piping and connected to the system of storm drains.

The canon along the east side of the campus will undoubtedly always remain as an open water course. It is planned to beautify this with planting and make it one of the landscape features of the campus. The water course in the east side of the campus, however, is being replaced by a five-foot diameter concrete storm sewer. Sections of this sewer have already been laid and in keeping with the needs of the growth of the University additional sections will be installed as the flat area through which this passes is required for University activities.

Gas for use in the various buildings is furnished through a high pressure service from the mains of the Southern California Gas Company, a four-inch service connection being installed to the meter room located in the boiler plant. Gas is delivered at a pressure varying from 20 to 45 pounds. All gas used on the campus is metered by this central metering equipment. The distribution system throughout the campus has been installed through the service tunnels connecting the various buildings, in each of which have been installed reducing pressure valves, with meters on the building services.

Provision has been made for the use of the natural gas in the boilers of the heating plant, these being equipped with combination oil and gas burners.

All buildings are heated by steam generated in high pressure boilers. The present boiler installation consists of two 350 H. P. Babcock & Wilcox Stirling boilers fitted with combination B. & W. oil and gas burners. The combination burner has, in actual practice, been found to be very satisfactory for the operation of these boilers. The switch from oil to gas, or gas to oil, is made with practically no interruption to the service.

Fuel oil storage is provided in an underground reinforced concrete tank with a capacity to hold one carload of oil. Close to the outside of the boiler room steel service oil tanks have been installed which may be filled either from a tank wagon delivering oil or from the underground concrete storage tank from which the oil will be pumped by an electrically driven pump. The boiler room equipment consists of deaerating feed water heaters, direct acting steam driven boiler feed pumps and direct acting steam driven fuel oil pumps.

All services in the boiler plant are metered so that the plant operators will have an accurate record of the fuel consumed, the pounds of steam generated and the temperature of and content of the flue gases.

An auxiliary 50 H. P. Kewanee horizontal tubular boiler has been installed to provide steam for the use of the Chemistry Building and other buildings requiring a very small amount during the summer sessions or other periods when the heat demand in the buildings is not sufficient to justify the firing up of one of the larger boilers.

Space in the boiler room has been provided for the future installation of additional units to a total of 2000 H. P., which certainly provides for an enormous growth in the institution.

Steam for heating the buildings is distributed throughout the campus at boiler pressure, the individual service to each building being fitted with reducing pressure valves and floor meters. The piping of this distribution system has been installed in the basements of the buildings and through concrete tunnels constructed to connect the basements and pipe spaces in the buildings, one with another. These tunnels, in general, are six feet, six inches high by four feet to five feet wide inside dimensions, and provide space not only for the steam and returning system but also the gas, the hot water supply and return and the electric conduits of the various electric distribution systems.

The heating system of the various buildings consists, in general, of direct radiation with automatic thermostatic control. The auditorium, seating over two thousand people, is heated and ventilated by a system of supply and exhaust, this also being controlled automatically by the Johnson Service Company's system of temperature control.

The large rooms of the Library and the auditoriums of the Physics, Chemistry and Education buildings are similarly heated and ventilated by an indirect system. The ventilation of the class rooms has been secured by the installation of an exhaust air system, the ducts and fans of which have been arranged to permit of a reversal of the air flow. At such times as the air flow is reversed the fresh air taken in from the outside is passed through scrubbing washers that permit of a certain amount of cooling without an unreasonable increase in the relative humidity. In the actual operation of the plants this modified form of cooling during extremely warm weather has proven very satisfactory. Due to the climatic conditions the relative humidity of the outside air has not been so high as to prevent the use of the modified air washer cooling apparatus.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

BUILDING A GREAT UNIVERSITY

Some Construction Problems

by LLOYD D. BARBER, C. E.

NOT often does one find in the construction of large continued projects the happy conditions from a Superintendent's viewpoint as have prevailed in the building of the new plant for the University of California at Los Angeles.

Working from the office of the Supervising Architect, George W. Kelham of San Francisco, as well as that of the Comptroller's office of the University at Berkeley, it has been necessary to interpret the feeling of our own office as well as that of the collaborating architects, Messrs. Allison and Allison, and the structural and mecanical engineers employed by them, all mechanical contracts being segregated.

Fortunately the site of the new campus was isolated and no outside interests were allowed to interfere with the work of superintendence.

A convenient staff office was first built, housing assistants and survey engineers, thus making it convenient for all departments in tying together the complicated details not only of the buildings but the utilities, landscaping, roadways, grading, walks, etc., under one general supervision.

Previous to completion of plans, soil tests were made by boring and specially designed soil pressure scales, using an ultimate test dry and wet of 1600 pounds per square foot.

The building area of the campus is covered with two to three feet of adobe soil and a sub-soil varying from clean sand to a clay-shale, the latter so hard in some areas that air drills and blasting were necessary in excavations.

The first structure to be built was the concrete and brick bridge, 310 feet long, 76 feet wide and 56 feet high, across the Arroyo. This runs on the main axis of the campus east and west and forms the approach from the east main entrance. Ground was broken May 7, 1927, and the contract was completed the following November.

The Library Building and Royce Hall were next under construction combined in one contract. Ground was broken September 19, 1927, and contract accepted December 31, 1928. Much difficulty was encountered early in the work as no roads had been made to the bridge. Owing to early rains the material trucks experienced considerable difficulty in getting around.

A central concrete mixing plant was built on the main axes of these buildings with the frame bucket tower high enough to chute the concrete alternately from one building to the other, about 200 feet apart, into fixed hoppers 200 feet from the main tower, chuting from these to distributing hoppers. Bunkers for aggregates and cement were of more than a day's capacity and materials for most part were delivered at night, making for economy both in de-

liveries and ready to hand materials. The inundator system was employed for aggregate mixing.

On December 31, 1927, ground was broken for the Chemistry and Physics Buildings, both also under one contract, these being completed January 19, 1929. One concrete mixing plant was employed in the center front of the Physics Building, while concrete was successfully carted in small Ford dump trucks from this to the hoist in front of the Chemistry Building, some 500 feet distant. Weight measurements were employed for aggregates on these units.

The Education Building was the sixth unit to continue the program, being placed under the same general contractor employed on the Library and Royce Hall buildings. Ground was broken April 29, 1929, and work completed January 20, 1930. Progress was rushed, owing to the requirements of the University, which had occupied the four completed units in September, 1929.

During the construction of this building the Westwood approach and gate, a donation by Messrs. Janss, were constructed by the same contractor as were the Esplanade walks under another contractor. Considerable excavation and grading and landscaping followed about the completed units.

The eighth major unit now under construction is Kerckhoff Hall, to house the student body activities. Ground was broken November 16, 1929, and the completion is expected before December 31, 1930. Some departures in design and materials were felt advisable in this unit and cut lime stone has been employed in combination with Flemish bond texture brickwork.

Generally speaking, we have been fortunate in having a selection of contractors and sub-contractors who have displayed exceptional spirit and personal pride in their work. The construction work has not been pressed for time in most part and in consequence the best results have been obtained.

During the work superintendent's meetings were held weekly, insistently attended by all trades, and difficulties smoothed out and schedules developed for the following week, a policy that has resulted to the advantage of all concerned, contributing to the general harmony of the trades and speeding up progress materially.

In the beginning of the masonry work we found local brickmasons unaccustomed to the large size brick and unfavorable to the system of pushing up the joints as specified in the plans. After a few instances of tearing down and rebuilding, however, no further difficulty was experienced.

Mortar of all brickwork and terra-cotta has been maintained in parts of one cement, one Timpie hydrated lime, three sand, half white and half gray, with imported French ochre to make a straw color. This mix has proved very satisfactory, the adhesive and compressive tests being excellent. Terra-cotta, which has been extensively employed, was full grouted between all masonry and concrete framework at contact points. The usual checking of terra-cotta has been conspicuous by its absence.

Concrete throughout has been carefully sampled and tested by the laboratory, as have the reinforcing and structural steel and other materials which might vary in quality.

General mix for structural concrete has been 1-2-4, using washed sand and gravel up to one and one-quarter inch carefully graded. In the last two units this mix was changed to 1-2½-3½ with apparent improvement in both workability and compressive strength, though the compressive tests throughout have run well over the requirement of 2000 pounds, and also at very close averages in each unit.

Approximately 100,000 yards of earth have been excavated or filled in landscaping, much of the fill having been obtained from new construction outside the campus area without cost to the job.

Much data as to quantities, costs, etc., has been compiled but space is not available for analysis. Suffice to say that more than one hundred and fifty contractors and sub-contractors have been identified with the work.

Personally, it has been an inspiration to watch a new University develop out of the 385-acre portion of the Rancho San Jose de Buenos Ayres—all within a period of less than four years.

DESIGN of HEATING and VENTILATING SYSTEMS for SCHOOL BUILDINGS

THE design of heating and ventilating systems for school buildings offers many problems not ordinarily met in other types of buildings, due to the fact that ventilation is invariably required in addition to heating. The School Building Reference Number of *Heating and Ventilating* contains a group of interesting articles outlining methods and equipment used in various cities of the country. The practice followed in San Francisco is discussed by H. S. Haley of Leland & Haley, consulting engineers, as follows:

In California the lowest average outside temperature with which the engineers have to deal during the heating season is 25 degrees. Practically all the school building mechanical equipment we have designed has been laid out as follows:

Classrooms are heated to 68 degrees to 70 degrees with direct radiation and window ventilation, or with universal heaters.

Corridors are heated to 68 degrees by direct radiation or footwarmers supplied with warm air, the air being supplied by gravity or by fan system.

Playrooms are generally open to the outside with direct radiators in some sheltered portion.

Auditoriums in grammar schools are heated and ventilated by the plenum system, or universal heaters.

Auditoriums in junior high and senior high schools are ventilated and heated on the basis of 30 c.f.m. per person, by the plenum system, air being injected into the auditorium through mushrooms under the chairs of the main and balcony floors, the main floor being supplied by one fan and the balcony by a second fan. The foul air is exhausted at the ceiling under balcony by one fan and from main ceiling at rear of balcony by a second exhaust fan. The air is taken from outside, or recirculated, and is passed through air filters, or cooling type air washers, depending on location, and when heated is thermostatically controlled to 68 degrees in auditorium.

Choral rooms or small theaters have practically the same equipment as the larger auditorium.

Gymnasiums and shops are heated by direct radiation or unit heaters.

Locker rooms are installed on each side of the corridors. The outside doors to the corridors are very seldom closed during the school hours. Very few schools built during the last ten years in California have locker rooms.

Cafeterias and lunch rooms are heated and ventilated in the larger schools by plenum system, unit heaters, or direct radiation. Small lunch rooms are heated by direct radiation.

Kitchens employ exhaust ventilation only by separate exhaust fan system. In larger schools this system includes a supply fan.

Chemical laboratories are heated by direct radiation or unit heaters, and exhausted by a separate fan system.

Toilet rooms, by gravity or mechanical exhaust ventilation, depending upon location in the building.

Shower rooms, by exhaust ventilation.

Shower dressing rooms are heated by direct radiation or unit heaters, and supplied with exhaust ventilation.

During the last few years we have de-

signed a number of school buildings that are heated by electricity.

The above are the general methods of heating and ventilating used in the school buildings during the last five years. Up to that time the split system was used in the larger schools.

Practice in Los Angeles

O. W. Ott, consulting engineer, says that the large majority of schools in Los Angeles are now using fuel oil with semi-automatic oil-burning equipment suitable for oil of 18 degrees Baume, while a few installations have oil burners of the full automatic type using 28 degrees to 32 degrees oil classed as Diesel oil and selling at a premium of approximately one cent per gallon over 18 degrees oil. In several of the beach towns the gas companies have made very attractive rates for natural gas with a heat content of 1000 to 1100 B.T.U. per cubic foot, and consequently there are quite a number of gas-fired plants. The gas-fired steam boiler plants are mostly standard type steel or cast-iron sectional boilers with front shot gas burners, although the tendency lately has been to install the special gas boilers on the small and medium-sized jobs. Many isolated schools are equipped with gas-fired steam radiators. This is true also of isolated buildings in high school groups and the temporary bungalow classroom buildings which are moved from school to school to take care of the overflow of students in rapidly growing districts.

High school and junior high school boiler plants are now mostly designed with a liberal sized boiler room with two boilers installed initially and space allotted for a third boiler. A majority have steel boilers of the portable return-tubular type and some with large cast-iron sectional boilers. Riveted steel and welded boilers are about equally divided with the choice for riveted boilers in the larger sizes. Grade schools have cast-iron sectional boilers which permit adding capacity.

Operation of school boiler plants is during the larger part of the school year for only a small part of the day—from 7 a. m. until noon, with an occasional firing in the afternoon. Exceptions to this are during one or two weeks each in December and January when the boilers are fired all day.

Newer installations are practically all direct radiation in the rooms, wall radiators under the windows in classrooms, concealed radiators in kindergartens and columnar or tubular radiators in offices. Unit ventilators are only installed in occasional instances such as lecture rooms, small auditoriums, etc. Fan blast systems were the vogue fifteen and twenty years ago but are very seldom installed at the present time. The writer has converted several old-time installations to direct radiators in each room. One-pipe gravity and two-pipe gravity steam systems are generally installed in grade schools unless the building is quite spread out, when a vacuum system is used. High schools and junior high schools are mostly vacuum installations.

There are no state laws which prescribe the quantity of air required in school ventilating systems even for auditoriums. The average practice is to supply 20 cubic feet per seat per min. for school auditoriums, but up to within the last few years a good many of the grade school auditoriums either were not equipped with ventilating systems or had exhaust ventilating systems only and depended on direct-indirect radiators to warm the incoming air. During the last few years the use of moving pictures for visual education work has brought about some change, so that practically all auditoriums of both elementary and high schools are now equipped with both supply and exhaust systems of ventilation. The preference seems to be for down-flow systems with the exhaust air withdrawn through mushrooms under the seats or through side-wall grilles located at the floor line. Occasionally up-fed jobs are installed with incoming air delivered through mushrooms under the seats, and with the exhaust through globe or revolving ventilators in the roof.

Classroom ventilation is practically all accomplished by means of open windows, as the mild climate permits open windows the year round. There are a number of older hot blast installations made ten or fifteen years ago in which the classrooms were heated with air delivered by duct sys-

tems to the individual classrooms, with no direct radiation. Most of these, however, have proved unsatisfactory, as it is practically impossible to keep the teachers from opening the windows and thus upsetting the distribution of warm air with unsatisfactory results to the classrooms on the cold side of the building. Personally the writer is satisfied that in Southern California the best answer to the classroom ventilation question is liberally-sized wall radiators under the windows so that the teachers can open the windows even in the coldest weather.

There is practically no such thing as a smoke nuisance in this part of the country, so that the need of air washers or air filters is small. There are still a few very old school buildings which have coal-fired warm air furnaces or even stoves, but the vast majority burn either gas or oil.

Some few installations have been made with air washers for the purpose of obtaining a cooling effect during the warmer months. These are in schools located in the interior districts where the tempering effect of the ocean breezes is not available. Grease filters are often installed in exhaust ventilating systems in school cafeteria-kitchens but that is about the extent of the use of filters in the writer's practice.

THE ARCHITECTURE OF SALEM

JAMES MORGAN, editorial and feature writer for the *Boston Globe*, in a series of articles about Time Worn Paths of the Old Bay State, devotes an entire chapter to Salem and its beautiful architecture. Those who have visited the old Massachusetts town will find Mr. Morgan's graphic description of its lovely architecture accurately portrayed and intensely interesting.

Salem—If you will not walk, then drive around Salem Common as slowly as the traffic will let you, and next poke along Federal and Chestnut Streets. In much less than a mile by the speedometer you will see many more beautiful houses than there are in the entire length of 5th Avenue, New York, with its side streets, thrown in . . . . or on any other millionaire row or gold coast in any of our big cities. Their pictures are in the portfolio—and in the head—of every well-equipped architect in America. Their doorways, porches, staireases, panels, mantels and wainscotings have been imitated, over and over again, all the way across the country.

How did Salem come to have such houses as these, and so many of them? I am asked that question as often as I make the round of them with companions who are seeing them for the first time. The answer is that, an even hundred years after the dark age of the witchcraft delusion, Salem came into her golden age. Her ships were first to break out a strange star-spangled banner in many a wondering port—in Russia and at the Cape of Good Hope, in the East Indies and China, in Madagascar and Australia—and Salem vied with Boston alone for the trident of American mistress of the seas.

The prosperity of Salem in that brief era between the Revolution and the War of 1812 built these houses. But it did not draw the lines of beauty in them. It takes money to pay for a house, 'tis true, but the character of the structure would seem to depend on how the money is made.

The great wealth heaped up by absentee owners of railroads, mills and mines gave our cities their dreary rows of brownstone fronts and their grimcrack castles of stone. The profiteering of the stay-at-homes in the Civil War disfigured the land with the shoddy pretension of the cupola, with the iron dogs on the lawn, in the purse-proud time of President Grant, that hell period of American art.

No such easy money built these Salem houses and their likes in Portsmouth, Newport, Newburyport, Wiscasset and lesser New England ports. They were made to frame men who did business on the great waters, who mostly entered the venturesome traffic through the hawse hole rather than the cabin window. Those men crossed the equator while yet in their teens and sometimes were captains at 21. They sailed only by rough, home-made charts, until one

of them, Nathaniel Bowditch, developed his "Practical Navigator," which still is the standard American authority.

By the time a Salem skipper settled down at home, with his own fleet of ships, he had seen the world, and he had such a nose for his trade that he flattered himself he could tell by the smell, before it docked, whether an incoming cargo was coffee from Mocha, pepper from Sumatra, tea from China, ginger, camphor-wood, sandalwood or what not. Those were the romantic days worth sighing for. Derby Street, its wharves heaped with bandanas and camel's-hair shawls, silks, chintzes, seersuckers and nankeens, was a midway plaisance, where weather-beaten, ring-eared Yankee tars mingled with slant-eyed Orientals; parrots squawked, monkeys squealed, and the first elephant ever to be seen in this country came ashore one day in 1796. Also here the first rubber shoes—and they were pure rubber—came from Para in 1824.

Step into the East India Museum, and you will see a wonderful store of the sea borne treasures that Salem men loyally brought home from a hundred strange shores. Across the street, in the Essex Institute, there are a thousand log books. Nothing else anywhere in this country is quite to be compared with those two exhibits.

Best of all souvenirs of Salem's golden age are the houses of her merchant adventurers. One of those merchants, Elias Hasket Derby, was the pioneer millionaire when he died in 1799. Soon another, Billy Gray, was rated a triple millionaire.

It took imagination and daring to make that money. In so making it, men also were made and their lives dignified. This dignity naturally was felt by the ship carpenters and carvers when they turned their skilled hands to building and decorating houses for them.

Many an architect, when he receives a commission from a Get-Rick-Quick Wallingford, strives only to hide the stark sordidness of the man's career by clapping him into a manor house of the Middle Ages or the villa of a Prince. Those old Salem craftsmen, on the contrary, respected and honored the men for whom they built, and they were inspired to fashion abiding places to fit them. Thus these big square wooden boxes somehow grew into things of beauty and Salem a shrine for American architects.

"CONSTRUCTION COMPANIES A MENACE TO ARCHITECTURAL PROFESSION"—A. I. A. SECRETARY

IN the United States in recent years there has been an increasing tendency toward the development of great construction companies which include in their organization complete staffs of architects and engineers.

It is a form of commercial competition which many in the architectural profession view with alarm, said Frank C. Baldwin of Washington, D. C., Secretary of the American Institute of Architecture at the Twelfth International Congress held in Budapest, Hungary, September 10, 1930. Mr. Baldwin fears that in time this might result in a complete submergence of the professional ideal, but it can be said with equal force that such a result would be at the cost of a great loss in aesthetic values.

The evidence of increasing public appreciation of the fine arts in this country is so encouraging that it appears reasonable to believe that the highly trained and cultured architect will always have a secure position in the community. It is also safe to assume, however, that this position can only be assured by avoiding all entangling commercial or contractual relations and rigidly maintaining a strictly professional attitude in the practice of architecture.

The Institute is developing an organization which aims at higher standards of architectural education and practice, wider recognition of good architecture, and cooperation with state, city and national agencies in promoting public building programs along sound lines. Development of the National Capitol is a major task of American architects.

Through its Committee on Education, in co-operation with the architectural departments of the leading universities, the Institute is aiding in improving and extending architectural education, not only in the universities, but in the lower schools.

The Institute has developed a model law for the registration of architects, and is now assisting its Chapters in securing the enactment of proper registration laws in their several States. Most of the States now have registration laws regulating the practice of architecture.

Through its Structural Service Department, under the direction of the Secretary's Office, the Institute is carrying on a large and difficult program of scientific research in the development of a service for architects which gives them for their actual problems necessary technical data relative to building materials and methods obtainable from no other source.

Mr. Baldwin explained the system of disciplinary control devised by the Institute. He described the Canons of Ethics of the Institute as a code of honor calling for nothing more than fair play among gentlemen. The disciplinary procedure, he said, was devised for those who violate the rules of good sportsmanship and for the protection of that great majority who serves them.

"It has been a source of gratification that the passing years have shown a steady decrease in the number of disciplinary actions," he reported. "It is believed that this is the result of an increasing knowledge of

professional ethics on the part of the architects of the United States, and also to a realization that the professional man who deals fairly with his brother practitioner and with his client thereby best serves his own interest."

The Institute, as the foe of ugliness, Mr. Baldwin continued, is sponsoring organized activity in many fields, including city and regional planning, industrial relations, collaboration in the arts of design, public works, competitions, education, standard accounting, practice, and foreign relations. A vigorous attempt will be made, he asserted, to preserve America's historical land marks, to prevent the spoilation of the rural landscape, and to impose proper control upon billboards and other forms of outdoor advertising.

The objects of the Institute, Mr. Baldwin concluded, are to organize and unite in fellowship the architects of the United States, to combine their efforts so as to promote the aesthetic, scientific, and practical efficiency of the profession, and to make the profession of ever-increasing service to society.

It should be understood that we are here dealing with a Republic of 48 States and several Territories and that, in this case, a national "Chamber" or "Institute" of architects can only function in an influential way by acting upon the most democratic basis and in a manner which is probably widely at variance with the practice of organizations having similar purposes and aims in more closely knit countries and governments.

The American Institute of Architects is the national organization of the architectural profession in the United States of America. It is analogous to the American Bar Association or to the American Medical Association, and is one of the best organized professional societies in America, wielding a national influence far more extensive than its limited membership would imply.

Because of the high standard of eligibility required for admission to the organization, its membership comprises not more than 3,500, or about one-third of those who are practicing architecture in the country, but the national importance and influence of the Institute is manifested by the fact that more than 70 per cent of the building operations of the whole country is the work of its members.

The compactness and efficiency of the Institute spring largely from the democratic procedure through which the will of the membership is expressed in the governing agencies of the body. The membership is extended throughout the entire forty-eight States and the Territories of the Union and, for convenience, is grouped into sixty-six Chapters.

Mr. Baldwin, in behalf of the American architectural profession, formally invited the Congress to hold its 1931 meeting in the United States. He suggested that sessions be held in Washington in connection with the annual convention of the Institute, and later in New York, and in Chicago as a part of the architectural program of the World Exposition.

WATERPROOFING and DAMPPROOFING

by DAVID B. EMERSON in Pencil Points

IN discussing waterproofing, dampproofing and floorhardeners, I shall write from the standpoint of a specification writer, and not from that of a chemist, as I am not a chemist, in fact my knowledge of that subject is very limited, therefore I shall treat more of the practical side of the question than of the technical side. Now let me say right here for the benefit of all concerned that this article is not written in the interest of any particular form of waterproofing or dampproofing or of any company manufacturing materials for these purposes, nor is it my intention to try to prove any one method superior to another, but to discuss all methods as fairly and justly as possible. Some misapprehension seems to exist among the younger members of the profession as to what constitutes waterproofing and what constitutes dampproofing, which frequently results in waterproofing being specified as dampproofing and vice versa.

Waterproofing consists of any of the various treatments of walls and floors to exclude water under pressure, whereas dampproofing is any of the various treatments usually applied to the inside of walls above grade to exclude moisture caused by seepage during stormy or damp weather.

There are three general methods of waterproofing: the integral, the membrane or exterior coating, and the interior coatings.

Integral waterproofing is accomplished by adding various substances—usually colloidal in their nature—to the concrete to fill the pores, thereby keeping out all water. These waterproofing materials are either in the form of powders, pastes, or liquids, and are either mixed with the cement before dumping it into the hopper of the mixer or with the gauging water when it is in powder form; they are always mixed with the gauging water when in the form of pastes and liquids. All integral waterproofings so far as I have any knowledge are patented products, and their composition is kept secret by the manufacturers. A very simple and also a very efficacious method of integral waterproofing, which can be used in localities where it is not easy to obtain the patented waterproofings, is the mixing of hydrated lime with the concrete. This method closes all the minute voids and pores in the concrete, which is all that is required to render it absolutely waterproof.

In specifying the waterproofing of concrete by the addition of hydrated lime the maximum amount of lime should be eight pounds to each sack of cement for a one-two-four mixture, and ten pounds to each sack of cement for a one-two-and-a-half-fine mixture. The rule is twice the amount of the coarse aggregate for the number of pounds of hydrated lime. If very coarse sand is used the maximum amount of lime should be used, but with finer sand a smaller amount may be used, with a one-two-four mixture as little as five pounds of lime to a sack of cement has been known to give perfectly satisfactory results.

The Portland Cement Association does not recommend the use of integral waterproofings in concrete, claiming that properly mixed concrete is waterproof without the addition of any waterproofing materials. This may be correct in theory, but in

practice it does not seem to work out so well as I never remember in my experience ever seeing any concrete which had not been treated by some waterproofing method which was waterproof or anywhere near waterproof. I have never seen it so stated, but it may be possible that the addition of integral waterproofing materials may reduce the strength of concrete slightly, but surely there should be a large enough factor of safety to render that negligible.

The only fault which integral waterproofing has so far as I have learned is that in case of settlement cracks in the concrete leaks are liable to occur and integral waterproofing does not remedy them.

Integral waterproofing pastes, powders, and liquids, if mixed with cement mortar which is used for the laying up of brickwork, will render the mortar water proof, which will prevent seepage through the walls. This has been done in quite a number of large buildings in New York City in recent years.

Membrane waterproofing is the oldest form of waterproofing in use and has one great advantage in that it can be used equally well on concrete, brick, or rubble stone walls. The principle of membrane waterproofing is the forming of an unbroken envelope about the entire substructure of the building. This is accomplished by coating the outside of the foundation walls and under the basement or cellar floor with layers of coal tar or asphalt-saturated felt, bedded in and well mopped with hot coal tar pitch or hot asphalt, thoroughly lapping all joints, both horizontal and vertical. It is very essential that the membrane shall run continuously under the walls, down the sides and along the bottom of all pits and trenches and under all column grillages. The number of layers or plies of felt depends entirely upon the water conditions. Where only a moderate amount of water exists, three plies are generally sufficient, but if a strong hydrostatic head is encountered at least five plies should be used.

Another very important item which must not be neglected in the specifying of membrane waterproofing is the forming of a key under all walls, over which the membrane should be carried. This can be done either by forming the key in the concrete or by laying a course of bricks directly on top of the footings. This is done to prevent the walls from sliding on the membrane, something which has been known to happen.

Membrane waterproofing is also used on top of the floor slabs under bathrooms, toilet rooms, kitchens and other places where a large amount of water is liable to be used, and also over sidewalk vaults. In waterproofing floors, the waterproofing should always be carried up at least four inches on all walls and around all pipes which run through the floor slabs.

The question of whether to use coal tar pitch or asphalt as a plying material is a mooted one, and so far as I know has never been satisfactorily settled. After the representatives of both interests have called and have told all the advantages of their material and the disadvantages of the other material, a poor bewildered and befuddled specification writer feels very much like saying with Mercutio: "A plague on both your houses."

One particular advantage which asphalt has is that it has a higher melting point than coal tar or pitch, so when there is any exposure to high temperatures I would advise specifying asphalt rather than coal tar pitch. A recent development in membrane waterproofing is the introduction of saturated woven cotton fabrics as a substitute for rag felt. These fabrics are much stronger and consequently less liable to tear than the rag felt. The manufacturers of these fabrics claim that by their use two plies of fabric are sufficient under ordinary conditions, and three plies are sufficient for any condition.

The only fault I have ever discovered in membrane waterproofing is the possibility of a puncture and the practical impossibility of getting at the membrane to make any repairs. Having once had the job of locating leaks in membrane waterproofing, I can say that the traditional needle in the haystack was not much more difficult. For

one use at least, I believe membrane waterproofing has no equal; that is for the waterproofing of floor slabs. For this it seems to stand alone and to have no rivals.

The interior coating methods of waterproofing are the waterproofed cement, frequently called the "Hydrolithic method," although that title is somewhat misleading as "Hydrolithic" is a trade name and refers to one of the several types of the same method, and not to the method itself; and the iron dust or iron oxide method, frequently called the "Ironite" method, which again is also one of the several types of the same method.

The waterproofed cement method of waterproofing was developed by E. J. Winslow, about thirty years ago, and consists of a specially prepared cement mortar containing a waterproofing element, which is applied to the inside surface of the walls and over the basement or cellar floor. There are one or two companies making waterproofed cements to be used for this purpose; also waterproofing compounds are sold which when mixed with cement mortar render it waterproof. The coating on the walls is usually applied in two coats, finishing 5/8 inch thick, and that on the floors is usually one inch thick and serves the double purpose of a waterproofing agent and a wearing surface. This method is specially suited for the waterproofing of deep foundations under excessive water conditions, like the Vesey Street Building of the New York Telephone Company, the foundations for which are carried down something like eighty feet, practically in the North River, and which has several basement stories below the water level which are perfectly dry.

The iron dust or iron oxide method, as it is sometimes called, consists of a finely powdered iron dust mixed with chemicals (generally sal-ammoniac) which, when mixed with water, causes the iron to oxidize rapidly and to expand to many times its normal size with a strong cementitious action, and a natural water resistant property. This compound is mixed to the consistency of paint and is brushed on in very thin coatings, four or five applications generally being sufficient. It is necessary to cover the waterproofing on floors with a protective coat of cement mortar at least one inch thick. This type of waterproofing takes plaster perfectly, if it is desired to finish any rooms or spaces in the basement of the building.

A combination of the two foregoing methods of waterproofing has been used recently with very good results. The walls were waterproofed by the iron dust method and the basement floor was waterproofed by the waterproofed cement method. This saved the waterproofing of the floors and then having to put on the protective coat of cement mortar, one operation sufficing. In specifying waterproofing to be done by this method it is good practice to specify that the wall waterproofing should be carried out on the floor at least six inches, and that the floor waterproofing should be carried up on the walls at least three inches. This will insure a thoroughly watertight joint at the junction between the two types of waterproofing.

Before either the waterproofed cement method of waterproofing or the iron dust method are applied, the concrete walls and floor should be thoroughly roughed and cleaned to form a good bond for the coating. One great advantage in the use of either of these methods of waterproofing is that if a leak occurs in the coating it is perfectly visible and the waterproofing can be hacked out and a new coating installed.

In all forms of waterproofing it is very important that where pipes or conduits go through the walls and puncture the waterproofing, the space around the pipe shall be made absolutely water tight by caulking and filling with asphalt or coal tar pitch. In specifying waterproofing it is well to remember that the application is worth quite as much if not more than the materials used, so it is good practice to specify that the work must be done by men thoroughly skilled in this kind of work, and by a company which has already done successful work of this character.

It is very important in writing the speci-

fications for a building which is to have the basement floor and walls waterproofed, to call for certain work to be done by other trades to accommodate the work of the waterproofing contractor. If membrane waterproofing is to be used, abrasion walls either of brick or hollow tile should be specified under masonry work. These walls should be four inches thick laid up against the sides of the excavation to receive the membrane before the walls are built. A cinder concrete mat four inches thick should be specified to receive the membrane under the floor and a protective screed of cement mortar one half inch thick should be specified to be laid over all membrane waterproofing of floors as soon as it is laid.

If the waterproofed cement or the iron dust method are to be used, a depression should be called for in the slab under the boiler, two feet at each side and at end of boiler and six feet at front of boiler, and six inches deep to allow for the installation of a sand cushion and a fire brick insulation under and around the boiler to protect the waterproofing. Also, specify that wherever doors occur in the partitions in the basement or cellar that slots shall be formed in the floor, to be three inches deep, one foot longer than the door openings and one foot wider than the partitions to accommodate the saddles and the door bucks.

Dampproofing, although it has only been in general use a little over thirty years, was known and used centuries ago. Cennino Cennini, a celebrated Italian painter writing sometime about the end of the fourteenth or the beginning of the fifteenth century, and giving instructions for the remedying of a damp wall before painting on it, recommends several methods, one of which is as follows: "First, take boiling ship's pitch and rub it well into the wall. When you have done this, take the same pitch (*pegola o pece,* i. e. coarse natural turpentine resin) and take dry new bricks pounded, in the same way pound them and incorporate them with the said pegola; put same all over the wall, that is, wherever there is any dampness and beyond. This is a perfect cement (smalto)."

Not such a far cry to our present-day dampproofing, and the powdered brick made a pretty fair plaster bond. So far as I have any knowledge the foundation of all dampproofings is bitumens, usually asphalt, and as practically all of them are patented products, their exact composition is kept secret by the manufacturers. There are a number of different types of dampproofings on the market suited for different conditions and different uses, the principal ones being the mastics which are so heavy that they are applied with a trowel, the semi-mastics which are soft enough to be applied with a heavy roofing brush and damp resisting paints which are applied with an ordinary brush. The majority of the mastics and semi-mastics contain asbestos fiber, which prevents the material from running in the summer and the asphalt prevents cracking in the winter.

A comparatively new preparation for use in dampproofing is the asphalt emulsion which is produced by dispersing pure asphalt in the form of minute particles in a water vehicle, with a small percentage of a colloidal mineral. This emulsion is of a heavy creamy consistency, in perfect suspension. When the emulsion is applied to the surface of a wall or elsewhere the water vehicle evaporates and the particles of asphalt coalesce, resulting in a firm coating of pure asphalt.

A new method of dampproofing has recently been perfected which is done in two operations. The first operation consists of coating the wall surface with a cement filler composed of cement, lime, asphalt emulsion and water; the second operation consists of the spraying on of an asphalt emulsion.

In specifying dampproofing, always call for the materials to be applied in strict accordance with the manufacturer's instructions, and without thinners or adulterants. Also, specify that the dampproofing shall be carried up into all window jambs and chases, and out at least one foot on the under side of all floor slabs. Dampproofing, either mastic or semi-mastic, is frequently

used on the outside of walls below grade where there are no serious water conditions to contend with but merely to prevent the moisture from the earth from penetrating the walls. This method of dampproofing is quite inexpensive and it practically assures a dry basement.

Colorless or transparent dampproofing—called "colorless waterproofing" by some manufacturers—is made in two forms, liquid dampproofing and dampproofing powder. The liquids are usually a combination of stearates and mineral waxes cut with volatile liquid thinners. They are applied either by brush or by spray, and penetrate stone or brick thoroughly, closing all cracks and pores, the volatile thinners evaporate leaving only the water resisting materials. The dampproofing powders are specially prepared, and are dissolved in clear water on the job and are applied by brush or by spray. Colorless dampproofings are used on the outside of exterior walls of brick, stone, stucco or concrete, where, as a result of improper construction or faulty materials, water or dampness find their way through the walls. They are also specified to be applied to walls which are to be built and there is a possibility that they may not be dampproof, and also to prevent efflorescence.

One of the latest, if not the latest developments in the field of waterproofing and dampproofing, is spandrel dampproofing or spandrel waterproofing or spandrel flashing, as it is variously called. This form of dampproofing has been developed to overcome what is probably the greatest defect found in the skeleton type of construction, whether built with steel or concrete frames, which is the leakage above and below the spandrel beams. These places are undoubtedly the most vulnerable spots in the whole building; where the curtain wall rests on the framing the moisture passes through the wall at the top of the spandrel beam due to the comparative smoothness of the concrete, and at the lower surface of the beam the wall pulls away from the concrete just a sufficient amount to cause a slight crevice through which moisture readily enters. Spandrel dampproofing is done with either asphalt saturated felt or saturated fabric, and is carried down the face of webs of the beams or on the face of the beam filling where steel framing is used and down the face of the beams where a concrete frame is used, and out on the lintel or a joint, and the top of the felt or fabric is turned up on the back of the wall at the floor level. The felt or fabric is given two trowel coats of asphalt mastic and all joints in the felt or fabric are cemented with mastic.

Another method of spandrel dampproofing is done by using a heavy cotton fabric impregnated and coated on both sides with asphalt which does not require coating with mastic, but simply has the joints cemented with it.

In addition to the general line of waterproofing and damproofing compounds, some very good side lines have been developed, one of the most useful of which are the various caulking compounds. These compounds are made from permanently elastic materials and should be non-staining. The original use for which most of the caulking compounds were intended was the caulking around window frames, but of late years they have also been specified for pointing up the top joints of stone and terra cotta copings, cornices, and pediments. The caulking around window frames is very essential, as the leakage of air and the penetration of moisture around the frames is a serious matter, and with the shrinkage of wood frames and disintegration of the mortar around steel frames it becomes much worse in a very few years, all of which is averted by properly caulking around the frames. Seepage through the joints in copings has been a leading cause of dampness in walls for centuries, in fact Cennini mentions it in his book and recommends recoping the walls to cure dampness. Much of this trouble is caused by the expansion and contraction of the stone, due to variations in the temperature which loosens the mortar and leaves an open joint. The elasticity of the caulking compound prevents this and helps materially in keeping dampness out of the parapet walls.

The ARCHITECT'S VIEWPOINT

¶ *Recent University of California Buildings*

¶ *Phoebe Apperson Hearst Competition Recalled.*

¶ *"Free" or Historic Style?*

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MEN and women, of course, and not buildings, make a University, even though the fact can be established beyond argument that such incidentals as buildings, next to winning athletic teams, do contribute to a University's popular reputation and acclaim. James Breasted, greatest living authority on man's earliest civilizations, gives a vivid, thrilling lecture—and an hour before the announced time the twelve hundred seats of Wheeler Auditorium are filled. Twenty-two huskies are to match strength and strategy in the Stadium—therefore one square mile of the city's best residence area is notified to do its week-end marketing on Friday, as the police will close the district on Saturday so as to "handle" the hundred thousand spectators for "The Game." To be sure, million-dollar football is a not unchallenged asset and the value to the University of such fleeting invaders as the "Big Game" brings may be questioned. For fans and rooters come, go, and leave only their peanut shells and torn "official programs" and take less away with them.

After all, the visibly permanent, the outward signs of a University are its campus, its buildings and equipment. Faculties and administrations change; student bodies run their four year rounds. The buildings, growing in number and usefulness, *distinguish,* if they do not *make,* the institution.

* * *

CALIFORNIA has been a notable center in college building activity for many years—at times has been one of the pace-makers. This issue of THE ARCHITECT AND ENGINEER shows some of the works undertaken and completed in the last four years, or thereabouts—by George W. Kelham and others who have worked with him as Supervising Architect—on the campus at Berkeley; illustrating, also, the conversion of the bare, brown hills at Los Angeles, imaginatively—if only half accurately—named "Westwood" into another full-fledged, effective University group.

Possibly it may have been fortunate for the University of California that the to-become-famous son of Phoebe Apperson Hearst did not graduate from Harvard when he left in 1885, for her later singleness of interest in California might thereby have been divided. A few years thereafter, on October 24, 1896, the Regents of the University of California received the broad-visioned letter in which Mrs. Hearst proffered the scheme, "implementing it" (to use the Hoover term) with unlimited funds, for the "comprehensive and permanent plan," to "be obtained by international competition."

In the preliminary prospectus for the competition—published in English, French and German—the purpose is stated "to secure a plan to which all the buildings that may be needed by the University in its future growth shall conform. All buildings that have been constructed up to the present time are to be ignored, and the grounds are to be treated as a blank space, to be filled with a single beautiful and harmonious picture as a painter fills in his canvas. It is seldom in any age that an artist has had a chance to express his thought so freely, on so large a scale, and with such entire exemption from the influence of discordant surroundings."

The story of the winning of the competition by Monsieur Emil Benard, of Paris,

his visit to Berkeley . . . of his re-studies and the adoption of the "modified Benard Plan" is known. The wise selection of John Galen Howard to carry on toward realization the dream which the program outlined—his years of devotion and incomparable contribution—are knowledge of us all.

What was beyond conception—or vision—in 1896, was the fact that the University was to grow in registration from approximately two thousand to eleven thousand, five hundred students in so short a time. The Hearst plan of the late nineties contemplated great growth, but no phenomena. Its proponents only partially grasped the fact that a University (to paraphrase a Pennsylvania Railroad statement) is never "built"; that, as in a living organism, the forces which shape its destiny demand growth, change, adaptability; that it must anticipate—in some cases lead—the advance. With broadening fields of research and instruction have had to come campus extensions, the necessarily larger sizes of buildings, while the beginning of a dormitory system was inevitable.

* * *

THE Berkeley buildings pictured in this number are responses to these new demands. Two of them, Bowles Hall and International House, are housing and social centers. Two others, Giannini Hall and the Life Science (in campus *argot* the "Life Size Building"—for it is larger than any other two) are for research and instruction. Another, the Ernest V. Cowell Memorial Hospital, is the health center—a hospital of the first class, with a preponderance of out-patients in normal times.

The Westwood Campus has begun with the Library, and the basic buildings for assemblage, class room and laboratory work. The students' social center is also well under way, and what is becoming a luxuriantly green campus is letting the CLIMATE take its course.

The field of analytic criticism is not for these running comments. It is a pleasure to observe, however, the growing appreciation of and respect for the virtues and beauty of honest concrete—as shown by the omission of exterior plaster on the Life Science Building, Bowles and Giannini Halls and International House—a compromise having been made with the architectural style at the Hospital, where a dash coat (only) of plaster was applied. These examples show progress in the right direction. Certainly reinforced concrete is most logical among our durable materials in large sections of California. It is inexpensive, relatively safe in fire and earthquake and is scientifically computible. Certainly, too, it is a truer, better material for exterior use than plaster which, slicked on over the flimsiest wood and paper bungalow, bricks or rubble stone, or even concrete, cheapens the look of all alike. And how often we hear the comment, so justifiable, when most of the form work is stripped off a concrete building which is to be covered with veneer or plaster: "It will probably never look so well again!" In two of these Berkeley campus buildings the exteriors were complete and all decorative elements cast in place, when the "forms" were stripped. In another, a few parts, pre-cast, were built into the forms, and all others were made with plaster waste moulds. To the writer, these seem to be "forward looking"—even though they are not "the *last* word"—which, come to think of it, is seldom the *first* word, or among the first.

* * *

THE freedom of free style, and its advantages over a set, historic style! A style such as the Lombard Romanesque, chosen—for adequate reasons—for buildings at Westwood, certainly limits the functioning of the architect, and I would not be sure that it may not affect the use of the completed buildings. One cannot so freely evolve a plan from the beginnings, considering only needs and functions. Then, too, windows must be relatively small, frequently mullioned, almost without exception "round arched" and, where windows are grouped, tops must be far below ceilings with consequent impaired light. Now, granting climate and all . . . even in Los Angeles—"Some days must be dark and dreary." So, may not "conformity" cramp "commodity"?

But, have the current "Modernists" a better formula? Three men start from scratch

"The time has come," the walrus said,
"To think of many bricks,
Cement, and sacks, and chimney stacks,
And varnish cans, and picks;

"Of yards of dirt, and length, and girt;
And gravel pits, and sand;
Of building loads, and city codes,
And wondering if they'll stand.

"Of boards and planks, and water tanks
And excavating tools;
Of depth, and height, and dynamite,
And, maybe, swimming pools.

"Of plastering, and lathering,
And elevator shafts;
Of knobs and doors, and concrete floors,
And men, and time, and crafts.

"Of painting trades, and shovel blades,
And salamander pots;
Of nickel plate, and completion date,
And all the whats and nots.

"And when we're done, but have added one,
To the vast and varying;
We have a list—perhaps we've missed
The most important thing."

While this sounds facetious it is only a jumbled up part of the many, many things that a quantity surveyor must keep in mind and about which he must have a very definite and accurate knowledge. We, as architects, realize the size and importance of their work. We know that a great amount of patience and a great deal of care, and time, and skill, is expended in listing the things which must be included in the building program.

The erection of a building is not a game. Everyone connected with it is engaged in the serious business of creating a building. For all of us who are thus engaged together in this work—architects, builders, quantity surveyors, workmen—there exists the great responsibility of giving to our client a good building, a safe building, and an economically built building.

NORTHERN CALIFORNIA CHAPTER

The monthly meeting of the Northern California Chapter, the American Institute of Architects, was held at the Clift Hotel, San Francisco, on Tuesday evening, September 30th. President Frederick H. Meyer presided.

The report of the Nominating Committee was read, submitting the following nominations for officers for the coming year: President, Henry H. Gutterson; Vice-President, Albert J. Evers; Secretary-Treasurer, James H. Mitchell; Directors, Frederick H. Meyer, Birge M. Clarke.

The report was accepted.

The secretary read a letter from the San Francisco Architectural Club which informed the Chapter of changes in program in the Club.

The matter of proposed San Francisco ordinance requiring certified building inspectors, was presented by Mr. Hildebrand and discussion ensued. Mr. Meyer and others spoke on the merit of proposed regulation, and explained its requirements.

The business session, brought to a close, William I. Garren, as chairman of the program, introduced the speakers, who addressed the meeting on various phases of the general subject of the evening, "The Tendencies in the Arts."

Lucien Lebaudt, artist, and Director of the California School of Design, spoke of the development of modern art and decoration, and emphasized that freedom of expression, simplicity, and casting off of imitation are characterictics of this new tendency, seeking thereby to find beauty and arouse emotion.

Aaron Altman, Director of Art in the San Francisco Public Schools, recounted impressions of modern art as noted in a recent European trip, with particular reference to the scientific means by which its various elements are determined. Methods of training in public schools were also dwelt upon.

Irving F. Morrow gave an interesting analysis of Modern Architecture, defining it as a development which is supplied by current technique to meet current needs. Modern decoration was distinguished from modern architecture, and causes were stated for the success or failure of each—J.H.M.

WITH the ARCHITECTS

BEST IN HOUSE ARCHITECTURE

Some of the best domestic architecture in Southern California is on exhibition in the Architects' Building, Fifth and Figueroa Streets, Los Angeles. The pictures occupy the pillars of the ground floor of the display rooms and form a permanent exhibit, enabling persons who contemplate building homes to study the different types of architecture suitable to the natural surroundings and climate of Southern California. Included in the exhibition is the work of John Byers, Roland Coate, Kirtland Cutter, Mark Daniels, Robert H. Ainsworth, Ralph Flewelling, Hunt and Burns, Myron Hunt, Reginald D. Johnson, Gordon B. Kaufmann, H. Roy Kelley, Arthur Kelly and Joe Estep, Marston and Maybury, Wallace Neff, Newton and Murray, Vincent Palmer, Garrett Van Pelt, Jr., Winchton Leamon Risley, Webber & Sapulding, Heth Wharton, Paul Williams, Carleton Monroe Winslow, Henry F. Withey and Witmer & Watson.

OAKLAND THEATERS

Construction is expected to go forward within the next thirty days on two large moving picture theaters in Oakland. One is for the Paramount Famous Players-Laskey Corporation and will be built at Twentieth and Hobarts Streets, from plans by Miller & Pflueger. The other, at Twentieth and Franklin Streets, for Warner Brothers, is being designed by G. A. Lansburgh. Both buildings will represent a total investment of more than $3,000,000.

ADDITION TO MILLS BUILDING

Construction will start immediately on a twenty-story, Class A addition to the Mills Building, Montgomery and Bush Streets, San Francisco. The plans were made by Lewis P. Hobart. Bids have been taken by the Mills Estate. The addition will provide offices and garage accommodations for tenants of the building. The estimated cost is $1,000,000.

PASADENA MUNICIPAL AUDITORIUM

Associated Architects, including Edwin Bergstrom, Bennett and Haskell, collaborating, have completed plans for a three-story Class A municipal auditorium for the City of Pasadena. The structure will be 200x300 feet, the auditorium seating 2500 persons. In addition there will be an exhibition hall and two lecture halls. The improvements will cost in excess of $1,000,000.

W. H. WEEKS' OFFICE BUSY

The offices of W. H. Weeks, San Francisco, Oakland and San Jose, have enjoyed one of the busiest years in the history of the firm. A very considerable volume of the business has been in school house design. Besides school buildings, costing in excess of $500,000, in San Jose and Santa Cruz, Mr. Weeks has been busy on plans for school work in Gilroy, Ceres and Santa Barbara. In the last named city a new junior high school costing $650,000 is being designed. At Santa Rosa a $1,000,000 group of junior high school buildings are to be erected with Mr. Weeks as architect.

ANTIOCH HIGH SCHOOL

Plans have been completed and bids are being taken to be opened October 22nd for a one and two story brick high school building for the Antioch Live Oaks School District. There is $150,000 available for the improvements. Davis-Pearce, the architects, are also architects for a $50,000 grammar school building at Calistoga and a $14,000 grammar school building at Jamestown, Tuolumne County.

STOCKTON CHURCH

Joseph Losekan, architect of Stockton, has completed plans for a brick church for the Greek Orthodox Society. The cost is estimated at $12,000.

Mr. Losekan is also the architect of a new ward building for the Bret Harte Sanitorium at Murphy, California.

VETERANS MEMORIAL FOR LIVERMORE

Plans have been completed in the office of Henry H. Meyers, architect for the Supervisors of Alameda County, for a brick Veterans Memorial Hall at Livermore. The style of architecture will be Spanish.

OAKLAND DEPARTMENT STORE

Weinstein Company, Inc., will build a department store at Nineteenth and Broadway, Oakland, from plans being prepared by William Knowles, 1214 Webster Street, that city.

LOS ANGELES APARTMENTS

Fred Sward is the architect of a seven-story reinforced concrete apartment building for Harry Bergman to be built on South Gramercy Place, Los Angeles, at an estimated cost of $200,000.

PERSONAL

Carl F. Grome, architect, has returned to San Francisco to the drafting rooms of the War Memorial after an absence of two years, part of which was spent in travel and study in Europe.

Ephriam Field, architect, formerly located in the American Bank Building, Oakland, announces the removal of his offices to 1535 Shattuck Avenue, Berkeley.

John J. Cone, President of Robert W. Hunt Company, engineers, and a member of that company since its organization in 1888, has retired. C. B. Nolte, vice president and general manager, has been elected president and general manager of the company, with headquarters at the general office, Chicago, J. C. Ogden, a director and Eastern manager of the company, has been elected vice president, with headquarters at New York City.

Ward and Blohme, architects have moved to 24 California Street, San Francisco.

A. Gordon Lumm is now associated with A. J. Russell and G. C. Lance, under the firm name of Russell, Lance and Lumm, 717 and 718 Jones Building, Tacoma, Washington.

J. W. Maxwell of Coronado, California, has moved to Kantoul, Illinois.

Charles H. Biggar has removed his offices to 554 Haberfelde Building, Bakersfield.

ENGINEER BUSY

The office of C. H. Snyder, structural engineer, 251 Kearny Street, San Francisco, reports an unusually large amount of work on hand, including the structural design for a new Federal Building at Washington, D. C., a Federal Building for the San Francisco Civic Center, Arthur Brown, Jr., architect; completion of drawings for the new Olympic Club Building and plans for rehabilitating the property of the California Rice Growers' Association, near Sacramento. Mr. Snyder has also completed the structural design for four Class A roof wards to the main pavillion of the City and County Hospital, San Francisco. Alfred I. Coffey and Martin J. Rist are the architects.

SAN FRANCISCO BASEBALL PARK

Construction of a new ball park for the San Francisco Baseball Club at Sixteenth and Bryant Streets, San Francisco, is being rushed and the engineer, H. J. Brunnier, states that the park will be ready for the opening of the baseball season next spring. Lindgren & Swinerton, Inc., are the contractors and they have work on the $1,000,000 structure well under way.

HONOR FOR KIRTLAND CUTTER

The Garden Club of America, after a tour of the Pacific Northwest, voted the opinion that Thornewood, the estate of Mrs. Chester Thorne at American Lake, Washington, is the most beautiful garden in America. This estate, located on the shores of the lake, with its garden on an axis, dominated by the snowy cap of Mount Rainier, is nestled in the heart of a forest of magnificent firs. In this vast forest a clearing was made for a house and garden, with its lawn and its vistas, and in this area the beautiful estate has been developed. The buildings were planned by Kirtland Cutter, architect of Los Angeles.

MR. WOLLETT'S WORK SHOWN

An exhibition of the work of William Lee Wollett, architect of Los Angeles, was held during the last part of September at the Architects' Building Material Exhibit, Fifth and Figueroa Streets, Los Angeles. It comprised photographs of interiors and exteriors of buildings and theaters, and examples of Mr. Wollett's work as a sculptor and painter.

Mr. Wollett is the exponent of an idea that prevailed in the early periods of architecture, when the individual craftsman was also an architect, engineer, sculptor and painter, and was responsible for the building from start to finish.

PROPER CREDIT

The interesting analysis of the law under which conviction was obtained in the case of J. G. Lehman, convicted of practicing architecture without a license, and published in the September issue of The Architect and Engineer, should have been credited to the *Daily Pacific Builder* of San Francisco. The analysis was made especially for that publication by William T. Sweigert, attorney. We were under the impression that the report eminated from the State Board of Architects Examiners.

PORTLAND ARENA

C. A. Houghtaling, architect, Portland, has prepared plans for a $400,000 arena and recreation building to be erected at East First Street, Williams Avenue and Hassalo and Multnomah Streets, Portland, Oregon. The structure will be 455x90 feet, and will have a ballroom and an ice sheet for skating and hockey; with a boxing and wrestling platform which may be raised and lowered by electric power. The arena will have a seating capacity of 8,500.

OBITUARY

ARTHUR S. MANGRUM

Arthur S. Mangrum, 65, President of the Holbrook-Mangrum Company, died September 4th at St. Francis hospital, San Francisco, following an operation for appendicitis. Mr. Mangrum was well known to the building industry of California, having devoted a greater part of his business career to the hardware, plumbing, tile and kitchen equipment business.

The first firm of Mangrum & Otter, of which Mr. Mangrum was founder, was organized in 1887 at San Jose. On November 4, 1895, the business was incorporated in San Francisco and grew steadily until the fire in 1906. An establishment was rebuilt on Mission Street and business resumed there until 1916, when the firm moved into larger quarters on Mission Street between Fourth and Fifth Streets. The present building of Moorish architecture was completed in 1928. Arthur S. Mangrum was well known as a leader and authority in his field. He is succeeded as President of the Holbrook-Mangrum Company by George D. Clark.

WILLIAM S. HEBBARD

William Sterling Hebbard, architect of Los Angeles, died suddenly August 24 while in Coronado visiting his daughter. Mr. Hebbard was one of a group of pioneer architects who did much for the advancement of the profession in California. He came to California in 1888 and located in San Diego, where he practiced until the World War. For a number of years he was a member of the firm of Hebbard & Gill of San Diego. During that period he served as a member of the State Board of Architecture and gave much of his time to work in the interests of his fellow-architects. He entered the Army Transport Service in 1917 and at the close of the war journeyed to Los Angeles and practiced his profession independently until the time of his death.

PAUL L. KAMPER

Paul L. Kamper, nationally known architect, was found dead September 3 at Detroit, under circumstances which authorities said indicated suicide.

Mr. Kamper was only 33 years old. As chief architect for the Book Estate in Detroit he had been in charge of plans to improve Washington Boulevard with $100,000,000 in buildings, to be capped by a 100-story office building. The Estate owned the entire street, running through the downtown district.

Among the buildings for which Kamper was architect were the $16,000,000 Book-Cadillac hotel and the 42-story Book Tower, for some time the tallest building west of New York City.

FRANK S. ALLEN

Frank S. Allen, 70, nationally known architect, died in Pasadena, August 26. Mr. Allen was known for his contributions to American museums of exhibits obtained in excavations in Egypt. In California during the past 40 years he designed many schools, including the San Jose State College, the San Diego High School, the San Pedro High School and many school buildings in Pasadena.

H. L. SMITH

Henry Sidney Smith, 90, former Alameda County Surveyor, civil engineer and for years connected with the Piedmont city government, died August 25.

COURT FAVORS ARCHITECT

An architect may supervise work through others employed for that purpose and personal appearance on the job is not necessary in the opinion of Judge Leon R. Yankwich of the Superior court of Los Angeles County, who gave judgment in favor of W. Douglass Lee against Fred Horowitz, attorney and owner of the Chateau Marmont apartment house in Hollywood.

Mr. Lee, who is an architect and also a builder, had a contract for the construction of the concrete shell of the building for which he was to receive $74,500. In addition to that, he was to supervise construction of the building. For this portion of the work he was to receive $14,000. He sued for $27,314.61, alleging that $12,065 was due him on the building of the shell, $10,958.15 on the supervision and $4290.88 for extras.

Horowitz contested the claim. He contended that Lee had broken his contract for supervision by not being on the job at least once a day, as required by the contract. He also claimed damages for faulty supervision.

The case was originally tried by Judge Edward W. Engs of Oakland, sitting in the Los Angeles Superior court. He heard the evidence for several days, but died without deciding the case. It was therefore necessary to retry it. The retrial occurred before Judge Yankwich and lasted nine days.

Judge Yankwich gave judgment for the plaintiff in the sum of $23,939.89. He allowed Lee the full contract price of supervision.

BERKELEY STUDIO

Edwin L. Snyder, architect of Berkeley, has completed plans for a $12,000 two-story brick studio building to be erected at Allston Way and Shattuck Avenue, Berkeley, for C. R. Roberts. The design is Spanish.

ENGINEERS DISPUTE ARCHITECTS

The structural engineers of New York have asked the Supreme court of the United States to pass on the validity of the New York multiple dwellings law which requires that plans for such buildings be filed by a "registered architect." The engineers claim this provision is an unjust and unlawful restriction of their profession. The case was carried to the highest court on a writ of certiorari in the matter of Oscar Goldschlag, No. 410.

The case, according to the petition, arises from a petition for a writ of mandamus to compel William F. Deegan, as tenement house commissioner of the city of New York, to receive for filing certain tenement house plans prepared by the petitioner, a professional engineer, licensed to practice in the state of New York.

By virtue of Section 120 of the law, it is explained, no tenement house shall be erected until there has first been submitted to the tenement house department by the owner or his agent, a copy of the plans for the proposed building.

The petitioner alleges that he drew plans for the owner of certain property and they were refused for filing on the avowed ground that he was neither the owner of the premises, nor a registered architect acting as agent for the owner, as required by the statute.

It is contended that Section 300 of the act, requiring "a registered architect," is unconstitutional in that it is an arbitrary classification, "unjustly circumscribing, limiting, and destroying the powers and privileges inherent to the practice of the petitioner's profession of a professional engineer and with no public evil to be remedied, and with no logical public purpose to be served."

The writ of mandamus was denied and the validity of the law sustained by the Supreme court of New York.

FEDERAL BUILDING ALTERATIONS

Extensive remodeling of the Appraiser's Building at Sansome and Washington Streets, San Francisco, has been authorized by the Federal Government as well as changes and additions to the main post office building at Seventh and Mission Streets. W. A. Newman, district engineer, will have charge of the work.

OAKLAND APARTMENTS

Douglas B. Stone, Howden Building, Oakland, has completed plans for a two-story frame and stucco apartment building to be erected on Crescent Street, off of Santa Clara Avenue, for R. E. Mayer. The estimated cost is $150,000.

TAX RULING AFFECTS ARCHITECTS

An architect rendering services under contracts extending over a period of more than one year and receiving part payment in advance, is not entitled to report his income on the long-term contract basis, according to a ruling of the general counsel of the Bureau of Internal Revenue. The position of the architect is held to be different from that of a contractor who does not know until the work is actually completed whether he has sustained a loss or made a profit.

STUDENTS WIN HONORS

John F. Bohac, of Olympia, Washington, won the Washington State College student architectural prize competition held recently. Second place went to Alexander Bilund of Seattle. Charles Stone, of Pullman, took third place while honorable mention was given Homer Childs of Lowell.

MERCED THEATER

A contract has been awarded for the construction of a Class A theater, store and office building at Seventh and J Streets, Merced, for the Golden State Theaters, Inc. Reed Brothers, San Francisco, are architects of the $250,000 structure.

EUREKA THEATER

Working drawings are being completed in the office of Norman R. Coulter, 46 Kearny Street, San Francisco, for a $150,000 store and theater building at Eureka for George Mann, manager of the Redwood Theaters, Inc., of San Francisco.

BOND ISSUE DEFEATED

For the third successive time, a Berkeley school bond proposal has gone down to defeat at the polls. The issue rejected at the last election was to provide $2,690,000 to finance the erection of new schools and additions to present school buildings.

PRIVATE SCHOOL

The Katherine Burke School, 1920 Washington Street, San Francisco, is having plans prepared by Julia Morgan for a one story and basement English club house and recreation building, estimated to cost $25,000.

MILITARY ACADEMY

Tourtelotte & Hummell, architects, Portland, are preparing plans for the Hill Military Academy group of buildings. Construction will be of reinforced concrete with cement stucco surface.

MUNICIPAL WAREHOUSE

Plans have been completed in the office of Dodge A. Reidy, Pacific Building, San Francisco, for a two-story and basement reinforced concrete supply warehouse for the City and County of San Francisco. The location is the corner of Fifteenth and Harrison Streets. Mr. Reidy is also completing plans for a warehouse and butter packing plant at Eighteenth and York Streets, San Francisco, for the Challenge Cream and Butter Association.

FRESNO COUNTY BUILDING

Several new buildings are planned under a bond issue in Fresno County. Swartz & Ryland have made preliminary drawings for a surgery building and a Contagious Ward at the County Hospital, the two structures to cost $250,000. Preliminary plans have also been prepared by W. D. Coates, Jr., for a steel frame and concrete annex to the courthouse to cost $375,000.

MUCH RESIDENCE WORK

Henry H. Gutterson reports plans in progress for residence work in San Francisco, Marin County and Alameda County, as well as two houses in the Peninsula section, one for Clarence Walter at Atherton and the other, alterations to the house of Morgan Gunst, in Burlingame.

$50,000 RESIDENCE

Morris H. Whitehouse and associates of Portland, Oregon, are architects for a residence estimated to cost about $50,000, for Mr. and Mrs. J. D. Roberts, who have bought an acre tract in Blythview addition, Portland.

BERKELEY RESIDENCE

J. A. Bried, 2337 Shattuck Avenue, Berkeley, will build a Spanish home on Arch Street, north of the University of California, Berkeley, from plans by Raymond De Sano, architect of Oakland.

OAKLAND CHURCH

The Oakland Japanese Methodist Church will build a brick structure on its property at Tenth and Brush Streets from plans by Louis M. Upton, 110 Sutter Street, San Francisco.

OAKLAND RESIDENCE

Hamilton Murdock, Syndicate Building, Oakland, has completed plans for a Spanish style residence to be built in Montclair Highlands, Oakland, for Dr. Alfred E. Wollitz.

SISALKRAFT IN UNIVERSITY BUILDINGS

The E. K. Wood Lumber Company furnished and applied Sisalkraft for the curing of concrete floors in Giannini Hall and International House at the University of California in Berkeley, both of which buildings are illustrated in this issue of THE ARCHITECT AND ENGINEER. Practically every known method of curing concrete depends upon the judgment of the laborer who applies either sawdust or sand, which must at all times be kept well sprinkled with water, whereas by the use of Sisalkraft the cure is automatic because it stops the evaporation of the mixing water in the concrete and this is recognized as approaching the perfect cure.

Sisalkraft not only cures the concrete, but protects the finished floor from dust, construction stains and the drip that is bound to occur when successive floors are poured. In fact it insures real protection for the finished floor.

Sisalkraft is also recommended for water-proofing frame structures where stucco finish is applied. Also under hardwood floors or for any purpose where damp proofing paper is required.

THE HUMOROUS SIDE

Pat: "Why are you wearing so many coats on such a hot day?"

Mike (carrying paint can): "I'm goin' to paint me fence, and it says on this can, 'to obtain best results, put on at least three coats'."

* * *

A New York master plumber had occasion to 'phone from one city to another while attending the master plumbers' convention at Atlantic City. Upon asking what the charge was he was told fifty cents.

"Fifty cents! For that distance? Great Scott! In New York you can call hell up for fifty cents."

"Possibly," coolly replied the operator. "It's in the city limits."

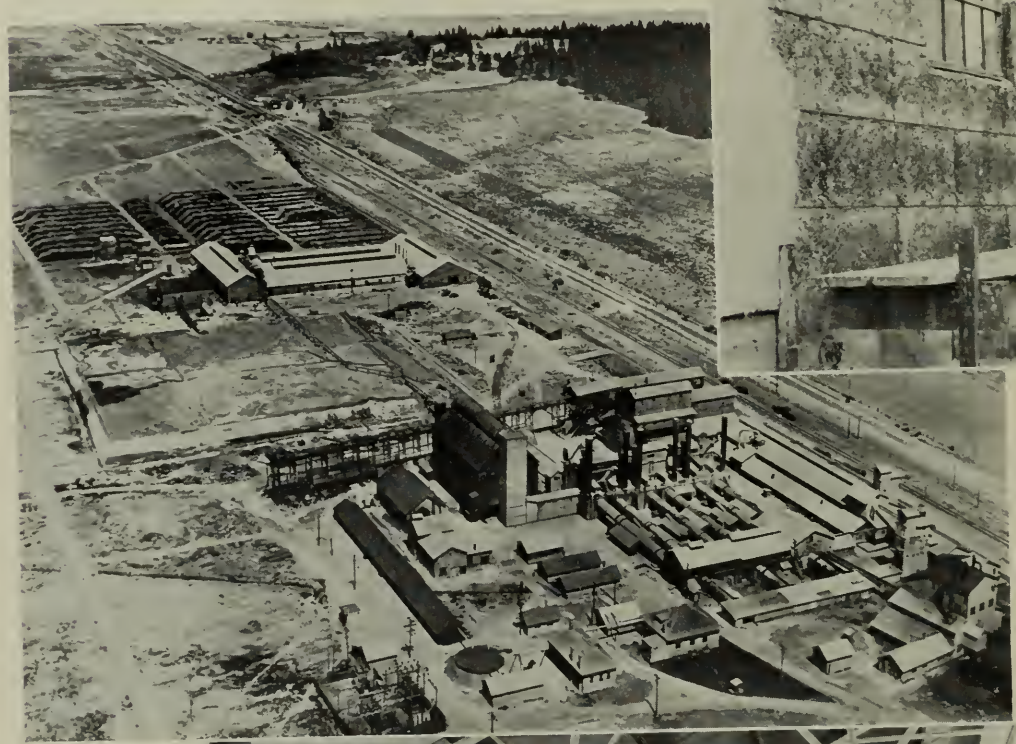
* * *

"If your business isn't worth advertising, advertise it for sale."—Exchange.

HOTEL FOR PHOENIX, ARIZONA

Walker and Eisen, architects of Los Angeles, have been commissioned to prepare plans for an eight-story Class A hotel for the Plaza Improvement Corporation of Phoenix, Arizona. There will be 235 rooms, the building to cover ground area 150x150 feet and to cost $325,000.

Plant of the Thermax Corporation at Chewelah, Washington, where "Insulating Lumber" is made



Applying the Finish Coat to Fireproof Wall of "Thermax"

AIRPLANE AND INTERIOR VIEWS OF FACTORY

A FIREPROOFING, INSULATING BUILDING MATERIAL COMPOSED OF ROCK AND WOOD

By R. E. Bennett

FOR the first time in America, there is being produced a truly fireproofing insulation board. This material is now being introduced to the construction industry by the Thermax Corporation. It has been manufactured and used successfully throughout Continental Europe for the past twelve years with a consumption of over fifty million square feet in 1929.

"Thermax" is the name of the product—it is a building material in board or slab form that is virtually a fireproofing insulating lumber, but embodying many other desirable qualities, such as light weight, structural strength, vermin proof, sound-deadening, acoustical value, non-absorbetent, odorless and permanent. It is an ideal building board, lath, plaster or stucco base, partition block or roof slab, manufactured in three thicknesses, 1"-2"-3", all 20" wide and 48" or 64" long and in units that are easily handled, nailed or laid.

Its uses in various types of buildings are innumerable—apartments and hotels, homes, industrial and manufacturing structures, cold storage plants, churches and theaters, semi-permanent exhibition buildings, resorts, poultry and brooder houses—in fact, buildings of all types can use Thermax advantageously in numerous ways.

This fireproofing building material is produced in one continuous mechanical operation that shreds waste timber into long, tough fibres, passing the fibres through a binding emulsion of high temperature cement, and rolls, forms, dries and cuts the product into size.

The first large and modern unit for producing this material in the United States has been built at Chewelah, Washington, (near Spokane) with an annual capacity of thirty million feet. Here the raw materials (rock and wood) are assembled efficiently and economically. This plant is now in full production and shipments are being made promptly. The distribution of Thermax will be through the lumber and building material merchants of the country.

The Thermax sales program is under the direction of the writer with general offices in the 1411 Fourth Avenue Building, Seattle, Washington.

Announcements and samples of this product have already been sent to the trade. Authentic test data, construction details and literature of attractive nature for properly presenting the merits of Thermax to the architects, engineers, builders and consumers of the United States, are available, and may be had upon request.

PACIFIC COAST FEDERAL BUILDINGS

Following is a synopsis of progress being made in the public building program on the Pacific Coast, as officially reported by William Arthur Newman, architect and district engineer:

New sites recently acquired include: Seattle, Wash., new Federal Office Building; Seattle, Wash., new Marine Hospital; Portland, Ore., new Court House and Main Branch Post Office, etc. Department acceptance made of offer to donate site for Federal Office Building, San Francisco; condemnation proceedings commenced for Post Office and Custom House site, San Pedro, Calif.

For new post offices: Hoquiam, Wash., Corvallis, Ore., Oakland, Sacramento, San Bernardino, Santa Ana, Pomona, Long Beach; Salt Lake City extension; Las Vegas, Nev. (donation).

Extension Post Office and Customs House, Honolulu, $318,000; new Immigration Station and Assay Office, Seattle, Wash., $538,000; new Post Office, Price Utah, $73,000; new Marine Hospital, San Francisco, $1,148,000; new Post Office, Pullman, Wash., $82,000.

Bids have been received for new Post Office at Klamath Falls, Ore.

Plans complete and proposals invited for a new Post Office, San Bernardino.

The Keyes-Elliott bill, in further amendment of the Public Buildings Act of May 25, 1926, and of subsequent acts of February 24 and January 13, 1928, has been enacted and approved under date of March 31, 1930.

By this act, the total authorization for public building construction purposes of approximately $347,000,000.00 as carried by previous legislation (including approximately $9,000,000.00 of old authorizations and an estimated amount of $48,000,000.00 as sale value of Government properties to be disposed of) is increased by $230,000,000.00 to a new total of approximately $577,000,000.00.

TERRA COTTA BROCHURE

"Terra Cotta for Public Buildings" is the name of a new brochure published by National Terra Cotta Society. While this book is intended primarily for circulation among public officials having to do with building construction, copies nevertheless are available to architects who will find it convenient for filing with A. I. A. file numbers. Among the Pacific Coast buildings illustrated is the Yolo County Court House, W. H. Weeks, architect, and the Los Angeles City Hall. Stress is given in the text to the adaptability of terra cotta to good architectural design and color scheme.

BOOK REVIEWS

By Edgar A. Kierulff

THE PERMANENT PALETTE by Martin Fischer, Professor, University of Cincinnati. Published by National Publishing Society, Mountain Lake Park, Md.

A book on colors and pigments and their various uses in art painting. The chapters embrace such subjects as: "Palettes of the Masters; The Munich Palette; The Transparent Pigments, etc. There is a painter's glossary and a bibliography and four colored plates. The book is well printed, bound in dark blue cloth boards with crimson dust wrapper. It should prove of great value and interest to the portrait and landscape painter, as well as to the architect interested in painting from the decorative standpoint and will prove of great interest as an interpretation of the chemistry of color.

THE LIGHTING BOOK (A book of reference for the planning of practical and artistic illuminations for all types of interiors and exteriors) by J. L. Stair, Chief Engineer. Published by Curtis Lighting, Inc., Chicago.

Folio size bound in burnt amber buchram and dust wrapper. Contents is divided into five parts under the following headings: History of the Lighting Art; The Story of Curtis Lighting; Engineered Lighting; Modern Lighting Practice; Planning Lighting Systems.

This book is extremely well gotten up and covers a wide and diversified field of the important subjects of lighting, as understood today. The illustrations are profuse and include stores, shops, industrial buildings and offices, hospitals, theaters, railway stations, floodlighting of buildings and monuments, the lighting of auditoriums, museums, residences and special technical illumination for laboratories, etc. There are several diagramatic sketches and drawings.

ARCHITECTS SHOULD ADVERTISE

Editor THE ARCHITECT AND ENGINEER,
Russ Building,
San Francisco, California.

On visiting an architect's office the other day, whose acquaintance I am sorry to say I did not make until after building my home, I was handed an article to read written by L. G. Scherer, on the question of Professional Advertising. Frankly, I thought it was very good—I have never been able to understand why architects do not advertise themselves and bring the value of their profession more to the attention of the public.

Some few years ago I erected a residence, and like a good many other home builders, I was informed that an architect was an item of unnecessary expense. Naturally, I had my builder draw my plans and though it was my own home, I have to admit that it was far from the architectural masterpiece I had anticipated. Had some one at that time only told me of what an architect's services really consist, the chances are I would be better off today, as well as happier with my home. While I had every confidence in my builder, I am as yet at a loss to know just what profit he made on my job, as there were no competitive bids.

The architect whom I was calling on when I read Mr. Scherer's article, explained to me the real function of his profession, and if the knowledge he transmitted to me was only made general, I am sure the public, as well as the architectural profession, would benefit by it.

Yours very truly,
W. A. BUCKNER.

PHELAN WEATHER TEMPLE

Editor, THE ARCHITECT AND ENGINEER, San Francisco: As an old friend and admirer of the late Senator Phelan may I offer a suggestion regarding one of his many generous bequests, which I think he himself would have welcomed had the idea ever been

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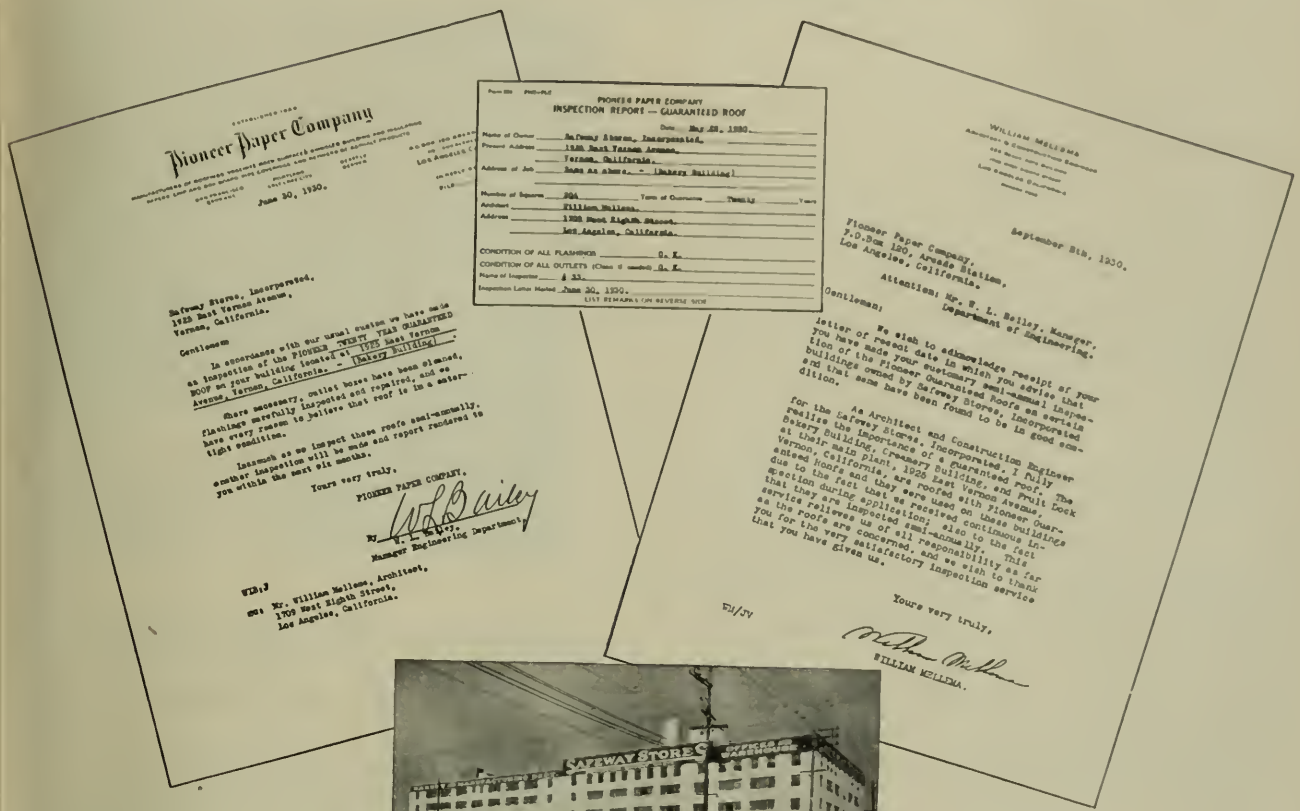
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presented to him. I refer to his gift of $25,000 for a monument to be erected on Telegraph hill by the Pioneers and Native Sons jointly.

A monument to a man's memory (which these organizations would naturally wish to establish) is generally understood to mean one of two things: An affair of bronze statuary, which usually becomes of less interest as time passes, witness the Pioneers and Native Sons' groups already erected on Market Street, or else an institutional affair, an ever living monument, which, as the Roman poet long ago pointed out, could be "more lasting" than bronze.

If this monument is to celebrate and glorify California what, may I ask, does the mere name of our wonderful State first call up in the minds of people anywhere around the globe? I should say the word "climate." If there were a goddess of climate, she would surely be our tutelary deity. It is climate that is populating our State faster than any other in the Union.

Then why not establish on Telegraph hill a temple of the weather just as the Athenians built their Tower of the Winds if we need a monumental precedent. Such a building might well be also octagonal in plan like its ancient prototype and of such bulk and silhouette that it would be a beautiful crowning feature terminating the sky line of San Francisco, visible from all the bay routes.

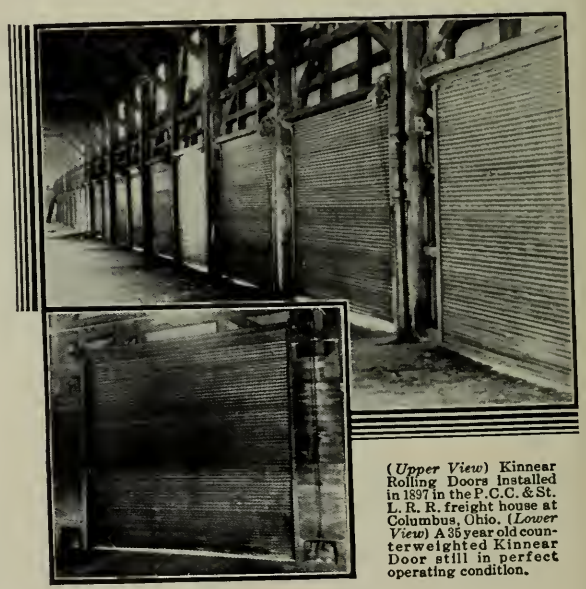
Such an institution might be known as the Phelan Weather Temple and in it could be housed the meteorological headquarters of the Pacific Coast. The rental paid by this Federal bureau as perpetual tenants would form a nucleus for the institution's permanent upkeep. The State and city should also be interested. The construction of such a temple would be talked about all over the world and would inspire much needed foundations in the interest of the science of meteorology. The supreme importance to humanity of this science is very little understood and its private endowment practically overlooked. Outside of local and immediate uses one of its great aims is no less than its final ability to foretell the weather a whole season in advance, "long range forecasting" as it is called.

The Phelan Weather Temple would set a glorious example to the furtherance of this great end and would forever commemorate our State, its climate, its most liberal citizen, its pioneer founders and its native sons. B. J. S. CAHILL, Architect.

$20,000 RESIDENCE

Plans have been completed for a $20,000 residence for Fred D. Zelinsky of D. Zelinsky & Sons of San Francisco and Los Angeles. The house will be built on Jackson Street, near Steiner, San Francisco, the contract having been awarded to Jacks & Irvine.

TIME—
THE ACID TEST



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WHEN DO WE COME OUT OF IT?

Writing under the above caption in the *American Magazine,* Dr. Julius Klein, assistant Secretary of Commerce, says:

"The directors of one of America's largest banks, including some twenty-four outstanding industrial and commercial leaders, recently cast their ballots in a confidential poll, voting on a question which right now concerns more people than do prohibition and the fall elections. The question they were asked to decide was this, in effect:

" 'When do we come out of it? How soon may we expect to reach the first reassuring turning point, away from the general business depression which followed the stock market collapse of last year, to the surer footing of reasonably 'good times'?'

"These bank directors have their fingers on the pulse of industrial and commercial trends. When their votes were counted, two-thirds had picked the current month as the turning point; the remaining third had set the time as next January.

"That two-to-one verdict that we'll be 'out of it' by the early fall seems justified. The signs are unmistakably that we are about to move out of the abyss of depression—more slowly, perhaps, than some optimists would have us believe, but more steadily than some pessimists are ready to concede. In our business recovery we may expect no sudden swoop up to the top. It will be a long time—a couple of years (possibly more) rather than that many months—before we climb back to the heights of 1929 prosperity. Nevertheless, we are climbing—soberly, unspectacularly—up to a healthier, normal level. As I write this, it is not too much to expect that by early fall the upward trail will have passed over the first ridge to a plateau of brighter prospects."

Speaking on the same subject, Clarence W. Woolley, chairman of the American Radiator Company, reminds us that there is always a considerable lag between great activity in construction and general business improvement. As much as eight or nine months often elapse, he says, between a high-wave crest of the former and that of the latter. Thus, the widespread response of industries and federal, state and local agencies to the program of increased construction launched at the beginning of this year cannot be expected to show substantial effects elsewhere in industry until early this fall. A summary of the expression of these business leaders leads to the conclusion that business is getting away from brass bands and is settling back to brass tacks, which is as it should be.

LOS GATOS RESIDENCE

Mrs. Emma L. Hopkins has commissioned Rollin S. Tuttle of Los Gatos to prepare plans for an English residence to be built on her property in the Los Gatos foothills. The estimated cost is $15,000.

MINIATURE GOLF COURSES

Miniature or pee wee golf, having taken the country by storm, a little data regarding the cost of building these lilliputian courses may be found interesting as well as instructive:

Concrete and brick figure promimently in their construction. Naturally, the most popular courses are those which present the neatest appearance, coupled with permanent construction. Makeshift construction does not, as a rule, meet with public approval, and temporary courses soon lose patronage to the permanent ones.

Miniature golf courses usually are built on areas from 60 by 120 feet up to lots 300 by 300 feet in size. The more elaborate the course, the more area required There is no set plan or arrangement to follow for laying out a course. The builder can use a great deal of originality in the layout and detail. Courses usually have 18 holes with the customary water hazards, bunkers, elevated tees and difficult passes.

After the course has been laid out and all of the hazards located, the concrete bases for the tees, fairways and greens are placed. These slabs generally are 3 inches thick. Where frost conditions and drainage are items to consider, a fill of tamped cinders or gravel and drain tile may be used to form a sub-base for the concrete, and a heavier slab sometimes is laid.

A 3-inch curb and an 18-inch or 24-inch concrete walk usually are built around each unit composed of tee, fairway and green. The curb permits banking shots much the same as in billiards. The 18-inch walk provides standing space for partners out of play, and carries the traffic from tee to green, thus saving the surface of the fairway from the excessive wear it would otherwise have to stand.

Fairways are often made to follow banked curves, sharp turns and angles, as well as up hills, over bridges and through tunnels. The fairways vary in length from 15 to 50 feet and sometimes are even longer, depending on the size of the course itself and the amount of detail in the entire layout.

The appearance of the course depends to a large extent on the landscape treatment. A rustic effect is often made by embedding various colored stones in the concrete work. Colored concrete likewise tends to add cheerfulness and life to the layout.

The use of stucco or brick on the cashier's office or other service buildings often helps to increase the attractiveness of the course. Seats and tables shaded by colored beach umbrellas add a restful note of comfort to the miniature course.

Various materials have been used to cover the concrete bases for tees, fairways and greens. Types of green felt, dyed cotton seed hulls, thin layers of sand and dyed jute pads are being used.

Construction work on the 2,000 courses in Los

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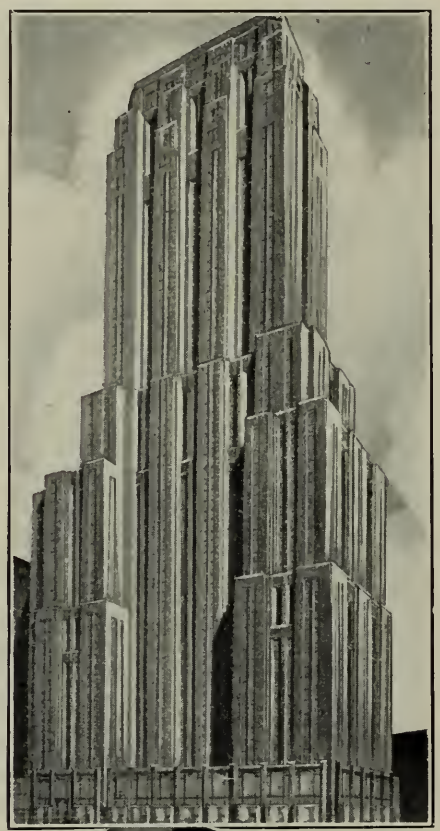

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Angeles County has given employment to 8,500 men, and it takes 4,000 more to operate the courses.

In the San Francisco bay section several prominent architects have designed courses costing from $7,500 to $15,000 each. It is said there is one course in Los Angeles upon which the owner has expended over $100,000. A course built on the State Highway near Burlingame (18 holes with a 35 cent charge per game) is reported to have netted its promoters over $300 a day.

CULLIMORE TALKS TO REPORTERS

Clarence Cullimore, formerly associated with Edwin Symmes in the practice of architecture in Kern County, California, has been traveling abroad since the first of the year with Mrs. Cullimore. While in Paris the Bakersfield architect come into the limelight by giving the following interview to a reporter of the Paris edition of the *New York Herald*:

"I consider that Spanish architecture is now a permanent feature in California, and it is right that it should be. It suits not only the climate, but the historical traditions of our state, which had Spaniards as its original setllers.

"Both the country towns and the larger cities are showing the Spanish influence more and more. When Santa Barbara was rebuilt after the last big earthquake, nearly all of its buildings were constructed

LAMELLA TRUSSLESS ROOFS

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after that type. In Los Angeles many of the schools, churches and large buildings show its influence, for there is plenty of space in California cities, and the structures there can be spread out after the Spanish fashion.

"In the east, of course, there is no possibility of anything but skyscrapers for the big cities. There a distinctly American style of architecture is being developed, and one cannot help but admire it. Many Europeans have the wrong idea of our skyscrapers. They think they are simply boxes piled on top of one another, without realizing the beauty of the straight line combinations."

ARCHITECTS LEAGUE OF HOLLYWOOD

A special membership meeting of the Architects' League of Hollywood was held early in September at the Roosevelt hotel. There was a large turn-out, including many prospective members. Clinton Wunder, executive manager of the Academy of Motion Picture Arts and Science, was the principal speaker. Mr. Wunder is a nationally known lecturer and debater and his talk elicited interest. L. G. Scherer is chairman of the membership committee. Each member is urged to sign up a new candidate. Future meetings of the League will all be held at the Roosevelt hotel.

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Interior of House, of H.A.G. Scherer, Summit, N.J. "*STEELTEX* was used for stucco and plaster base for the Stroh, Scherer, and Holbrook Houses. The photos show the results. O. K. in every case."
(Signed) Duncanhunter, Architect, New York

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The background of this advertisement shows Ribbed *STEELTEX* lath. Note how the plaster flows against the backing and under and around the steel wire network. There are three other styles of *STEELTEX*,—for STUCCO,—for BRICK or STONE VENEER,—for FLOORS and ROOFS. Also *STEELTEX* partitions and suspended ceilings and CORDEX, a super building paper. Write today for FREE descriptive literature. Address DEPT. I-53.

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San Francisco Ferry Building Dock—floored with Port Orford Cedar nine years ago. Constant jar and the wear of steel-tired trucks have affected it but little.

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WASHINGTON STATE CHAPTER

In obedience to the vote of the Chapter at its preceding regular meeting, that sessions for the coming year begin in September, a special meeting was called for the evening of Thursday, September 4, at the Broadmoor Golf Club, Seattle.

After an exchange of greetings, a bountiful dinner was served and at its conclusion the meeting was called to order by President Borhek. The minutes of the last two regular and intervening special meetings were read by the secretary and approved.

A communication from the American Institute of Architects was read giving the disposition, by reference to the appropriate Institute committees or otherwise, of the various resolutions adopted by the Chapter at a pre-convention meeting. Committee reports were then called for, the first being from the committee on education of which George Gove is chairman. Mr. Gove reported negotiations with the Beaux Arts Institute of Design regarding students' competitions and also a progress report on the students' sketching contest being undertaken by his committee. This report was accepted.

For the legislative committee, Mr. Vogel, chairman, reported a conference with the State Board of Architects' Examiners, relative to the oral examination which had been conducted and had occasioned

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"CASTELL" POLYCHROMOS PENCILS IN 64 COLORS
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some criticism from the Chapter. It appeared that there had been no time or funds available for holding the usual written examination and the Board had endeavored to make the oral test an equivalent, and it believed that it had been considered as equivalent. The committee was also holding various conferences preliminary to a revision in the Architects' License Law which it was hoped would be accomplished during the coming session of the state legislature.

A report from the public information committee was made by Mr. Alden in the absence of the chairman. This was in the nature of a progress report, suggestions and criticisms being desired on the various matters being considered by the committee. These matters were as follows: First, the distribution of circulars to be sent out by the Chapter or its members for the information of the public; second, conferences with other groups in the building industry for the consideration of a possible "Build Now" campaign, and third, attempting to work up some radio broadcasting and other architectural advice to the public in co-operation with the Builders' Permanent Exhibit in Seattle. The members present voted their approval with an allocation of $300 in the budget for the use of the committee.

John E. Carroll was introduced as one who had been regarded by the commission as one of its par-

Stairway of Tunisian Tile with Floors and Steps of Fallston Tile
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Showing the use of Decorative Tile in a public building

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HOUSES laid with "Perfection" Brand Oak Flooring command a better price on the open market.

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METAL DOORS

O'NEILL LINEN SHOP, MICHIGAN SQUARE BLDG., CHICAGO
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A faithful interpretation of the architect's design is assured by Kawneer custom-built service. Doors can be furnished in bronze or aluminum alloy. Send for descriptive circular.

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ALSO ORNAMENTAL BRONZE AND IRON

ticularly valuable members, with his helpful assistance as a member of the City Council. In speaking of the Planning Conference, the second which he had attended as a delegate from the commission, Mr. Carroll said he had been particularly impressed with the seriousness of the occasion, the members realizing the importance of the subject to which the Conference was devoted and applying themselves diligently to the proceedings which followed a very full program.

As preliminary to speaking more in detail of the Conference, Mr. Carroll gave some views on the situation in Seattle. He said: "We had not been successful here in selling the city planning idea to the public. Our Planning Commission had not been created in response to a public demand as in other cities but was the result of the efforts of a few who were cognizant of its value to the city. Two things we particularly need at this time; legislation to properly establish authority to plan and to enforce provisions and, second, city wide support for city planning. The new Planning Commission could not, and no planning commission could, succeed without authority and financial support."

Of specific vital problems appearing at the Planning Conference, Mr. Carroll mentioned miniature golf courses which appeared difficult to regulate in many cities. Seattle had apparently solved this by a licensing system. Parking in congested areas was another vital question.

As constructive criticism of the Seattle Planning Commission, Mr. Carroll believed it had been too technical in its work, giving too much attention in its deliberations to engineering details. He believed a commission should determine generally the results to be accomplished, such as approximate location of highways, leaving the detailed locations, grades, etc., to be determined by engineers, with reports subsequently approved by the commission.

Victor Noble J. Jones of Seattle has been elected to associate membership in Washington State Chapter. Mr. Jones, after graduating from the Architectural Department of the University of Washington, pursued a graduate course at the University of Pennsylvania, and after experience in the offices of prominent architects in the East as well as in Seattle, is now a member of the firm of McClelland, Pinneh and Jones.

SAN DIEGO ARCHITECTS MEET

At the annual election of officers of the State Association of Architects, San Diego Section, Herbert J. Mann was elected president and district advisor; Eugene Hoffman, vice-president, and Robert J. Curtis, secretary and treasurer. The State Association has replaced the former San Diego Architectural Association.

AMERICAN INFLUENCE ON AUSTRALIAN ARCHITECTURE

THE following letter from Leslie M. Perrott, architect of Melbourne, Australia, is of more than passing interest because it indicates the influence of Pacific Coast architecture on Australian architecture and shows the tendency of Australians to adopt American methods and use American products. Mr. Perrott has long been a subscriber to THE ARCHITECT AND ENGINEER and he is frank to admit that he reads its advertising pages with a degree of usefulness.

Quoting from Mr. Perrott's letter in which he refers to a fifty-room hotel and two industrial buildings he has recently completed, each of these buildings, he says, "possesses some slight interest to American readers in as much as they feature many American products.

"I have made five separate visits to America to keep myself familiar with the latest developments in your country, particularly with regard to hotel construction.

"The hotels I have designed are planned along strictly American lines and in each case the materials used in their construction have been largely imported from America.

"America today is accepted as the foremost country in building construction and as we are a young country developing on similar lines, it is only natural we should adopt your ideas.

"America is also becoming more and more interested in Australia. This is evidenced by the large number of American concerns that have established factories in Australia. This influx of Americans and American money naturally has an influence on our work. Particularly does this apply to hotels and apartment houses.

"The visiting American finds in the Hotel Alexander, which is Australia's first hotel to have a bath to every room, a duplicate of any of his own more recently constructed commercial hotels. He enters the hotel through Van Kennell revolving doors. As he steps into the lobby the soft feel of the carpet is due to Ozite carpet cushion. He registers at the desk and steps across to the elevator where an attendant slides open the Tyler three speed doors. He steps into the car and is sped up to his floor in Otis gearless traction elevators.

"As the bell boy unlocks his door the hardware may look familiar. It is identical with all Statler hotels. If he should decide his clothes need pressing he makes use of the Servidor with which each guest room is equipped.

"On entering the bathroom he is impressed with the glistening white floor and wall tiles from the American Encaustic Tile Company, and the spotless cleanliness of the plumbing fixtures from the Standard Sanitary Manufacturing Company.

"On each floor there is a Cutler mail chute.

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Pressure Relieving
JOINT

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OHIO BANK BUILDING AT TOLEDO
Mills, Rhines, Ballman and Nordhoff, Architects

Architects Adopt This Positive Method of Insuring Great Facades

THE Cowing Joint is installed in the columns and weight carrying mullions at a mortar course. Its purpose is to relieve pressure thrown on the facing material by compression of steel, temperature changes, vibration and wind stresses. Experience has proved that these severe stresses, unless relieved, will crush and break the stone, terra cotta or marble.

Where the Cowing Joint is installed at each story height the building is completely insured against cracks and spalls, the mortar joints are protected from crushing and the maintenance cost of tuck-pointing is eliminated. The facade is in no manner weakened because the Cowing Joint carries the normal weight of the facing material and compresses only enough to relieve the stress.

See "SWEETS" Catalogue

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A New Panelboard —typically Ⓕ

Combining Ⓕ original sectional construction features with great compactness and light weight

SUPPLEMENTING the progressive Ⓕ line of Panelboards comes this new addition, the Ⓕ Leader Type LNTP.

Having originated the sectional type, now universally accepted, Ⓕ considers changing needs and fills them, bettering each wiring job where Ⓕ Panelboards are used.

With all the basic features of the original Ⓕ construction retained this new type Ⓕ Panelboard includes a newly designed one piece, moulded section made of Bakelite, an improved arrangement of bus bar connection and other very practical features. It is narrow and light in weight—making it easier to handle and install. All current carrying parts are molded into or riveted to the back of section.

Write for the new Bulletin No. 50 on Type LNTP. See the Ⓕ man in your territory or write direct about your panelboard and switchboard problems.

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1006 Mountain St.

"If by chance the guest should be interested in hotels and took a look at the two kitchens he would find a lot of familiar equipment. Auto-San monel metal dish washers, steam tables and cold service equipment, Wear-Ever aluminum steam kettles, Edison electric bake oven, Emery Thomson ice-cream freezer, Jewett refrigerating cabinets, and so on.

"If the guest is mechanically inclined he would find the basement of interest. The two boilers are fired with Ray full automatic oil burners. The sump pumps are from the Taber Company. The vacuum cleaning plant is Spencer. The cold storage doors are Jamieson. The building water service is run in brass pipe from the American Brass Company. Fire hose cabinets are from the Plant Rubber and Asbestos Company of San Francisco. It may be of interest to many of the concerns whose names have been enumerated to know that the writer specified them largely through reading the advertising pages of THE ARCHITECT AND ENGINEER.

"When one considers the fact that freight, insurance and duty add approximately 100% to the cost of all these goods one can appreciate the expense of providing this high degree of comfort for the traveler.

"Australia is a young country whose present wealth has been built up mainly from her two primary products, wheat and wool, although today she is fast developing her secondary industries. Naturally in the past she has gone outside to purchase those things not at present produced in Australia and America has succeeded in obtaining a very large proportion of this business."

NEW OIL BURNER

After 25 years of pioneering and development, the S. T. Johnson Company announces the production of the first domestic, commercial and industrial fully automatic oil burner to be listed as standard by the Underwriters' Laboratories, to burn industrial fuel oils as heavy as No. 6.

This new Johnson rotary mechanical draft automatic oil burner is catalogued as the Type "30" Automatic Burner, and is made in five sizes covering a range of from 300 to 27,800 square feet of steam radiation or the equivalent.

The new burner has the advantage of burning the cheaper grades of heavy industrial fuel oil because of the complete combustion secured by the Johnson method of atomization. The fuel is automatically supplied to the burner from the storage tank by an oil pump built as an integral part of the burner. It is then completely atomized by centrifugal force and mixed with the proper amount of air to create complete combustion, ignited by expanding gas pilot, then burned in suspension, producing a soft, clean flame which can be easily adjusted as to width, length and volume by the air control lever regulating valve

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—

Common, $29 to $35 per 1000 laid, (according to class of work).
Face, $70 to $95 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $.95 lin. ft.
Brick Walls, using pressed brick on edge, 65c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.85 sq. ft.
Common, f.o.b. cars, $12.00 plus cartage.
Face, f.o.b. cars, $45.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 94.00 per M
4x12x12 in.	106.00 per M
6x12x12 in.	154.00 per M
8x12x12 in.	235.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$108.00
6x12x5½	74.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.
Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.
Terazzo Steps—$1.50 per lin. ft.
Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Elliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
Elliott top gravel, at bnkrs.	1.40 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) $2.64 per bbl.
Cement (f.o.b. Job, Oak.), $2.64 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Atlas "White" .....$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4½-inch concrete basement floor.....14c to 15c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps.....$1.26 per lin. ft.

Dampproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $5.50 per square.
Hot coating work, $2.00 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).
Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—

Sand, 50 cents; clay or shale, $1.00 per yard.
Teams, $10.00 per day.
Trucks, $21 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 80c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c per square foot.
Note—Add extra for setting.

Heating—

Average, $1.70 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, $23.00 per M (average).
Common O. P. select, average, $30.00 per M.

1 x 6 No. 3 Form lumber	$19.00 per M
1 x 4 No. 1 flooring	42.00 per M
1 x 4 No. 2 flooring	39.00 per M
1 x 4 No. 3 flooring	35.00 per M
1 x 6 No. 2 and better flooring	39.00 per M
1¼x4 and 6 No. 2 flooring	48.00 per M

Slash grain—

1 x 4 No. 2 flooring	$34.00 per M
1 x 4 No. 3 flooring	32.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	4.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$135.00 M ft.
1 1-16x2¼" T & G Maple	145.50 M ft.
⅞x3½ sq. edge Maple	132.50 M ft.

	13-16x2¼" T&G	¾x2" T&G	5-16x2" Sq. Ed.
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	

Laying & Finishing 16c ft. 15c ft. 13c ft.
Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.40
3 ply per 1000 ft. roll	8.00
Sash cord com. No. 7	$ 1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.25 base.
Belgian nails, $3.00 base.

Millwork—

O. P. $80.00 per 1000. R. W., $80.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.00 and up, each.
Doors, including trim (single panel, 1¾ in. Ore. pine) $6.75 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 20c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $5.50 each.
Dining room cases, $6.50 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.
For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

Tennessee ..... 1.70 sq. ft.
Verde Antique ..... 3.00 sq. ft.

NOTE—Above quotations are for ⅞ inch walnscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique .....$2.50 sq. ft.
Tennessee ..... 1.50 sq. ft.
Alaska ..... 1.35 sq. ft.
Columbia ..... 1.45 sq. ft.
Yule Colorado ..... 1.45 sq. ft.
Travertine ..... 1.60 sq. ft.

Painting—

Two-coat work .....30c per yard
Three-coat work .....40c per yard
Whitewashing ..... 4c per yard
Cold Water Painting ..... 8c per yard
Turpentine, 78c per gal. in cans and 63c per gal. in drums.
Raw Linseed Oil—$ .90 gal. in bbls.
Boiled Linseed Oil—$ .93 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs)

Per. Lb.
1 ton lots, 100 lbs. net weight 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots 13c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots.....13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 13¾c
500 lb. and less than 1 ton lots....14c
Less than 500 lb. lots.....14¼c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch.....$1.00 lineal foot
8-inch..... 1.50 lineal foot
10-inch..... 1.85 lineal foot
12-inch..... 2.10 lineal foot

Pipe Casings — 12″ long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

Yard
1 coat, brown mortar only, wood lath..$0.40
2 coats, lime mortar hard finish, wood lath ..... .52
2 coats, hard wall plaster, wood lath— .55
3 coats, metal lath and plaster 1.00
Keene cement on metal lath 1.25
Ceilings with ¾ hot roll channels metal lath ..... .67
Ceilings with ¾ hot roll channels metal lath plastered..... 1.40
Shingle partition ¾ channel lath 1 side .62
Single partition ¾ channel lath 2 sides 2 inches thick..... 2.20
4-inch double partition ¾ channel lath 2 sides..... 1.30
4-inch double partition ¾ channel lath 2 sides plastered..... 2.45

Plastering—Exterior—

Yard
2 coats cement finish, brick or concrete wall $1.00
2 coats Atlas cement, brick or concrete wall 1.25
3 coats cement finish No. 18 gauge wire mesh 1.75
3 coats Atlas finish No. 18 gauge wire mesh 2.05

Wood lath, $4.50 per 1000.
2.5-lb. metal lath (dipped) ..... .18
2.5-lb. metal lath (galvanized) ..... .21
3.4-lb. metal lath (dipped) ..... .23
3.4-lb. metal lath (galvanized) ..... .27
¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, $13.85 (rebate 10c sack).
Dealer's commission, $1.00 off above quotations.
Hydrate Lime, $19.50 ton.
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—

From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $5.25 per square for 30 squares or over.
Less than 30 squares, $5.50 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—

Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft. (not

Skylights—

Copper, $1.35 sq. ft. (not glazed).
Galvanized iron, 28c sq. ft. (not glazed).

Stone—

Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Steel Structural—$84 per ton (erected). This quotation is an average for comparatively small quantities
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $78.00 per ton.

1930 WAGE SCHEDULE FOR SAN FRANCISCO BUILDING TRADES

Fixed by the Impartial Wage Board

Craft	Journeymen Mechanics
Asbestos workers	$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00
Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housesmiths, arch. iron, skilled all branches	9.00
Housesmiths, arch. iron, not skilled all branches	8.00
Housesmiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scraper teamsters, 2 horses	6.00
Scraper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Friday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturdays, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

and by the use of different combinations of fuel atomizers and air nozzles.

Clean oil is also assured, as the burner is equipped with an oil strainer of generous screen area. The screen is constructed of Monel metal to resist the attack of oil, and is housed in a cast iron container so designed the screen may be easily removed and cleaned, and any accumulation of foreign matter or water drained through the bottom of the strainer.

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Positive, carefree lubrication is provided by a continuous circulation of lubricating oil supplied to all bearings by the worm gear drive from the gear case which is filled through a cup on the side of the burner.

CONTRACTORS FILE OBJECTIONS

Radical departure from established procedure for street work are opposed, but some modifications are favored, in a statement submitted to the Joint Legislative Committee on Street Improvement Laws by California State Branch of the Associated General Contractors of America. The statement was prepared by H. A. Postlethwaite, counsel for the association, and is in part as follows:

"Our attitude and the suggestions herein contained are based on an intimate contact with the whole question of improvements and assessments over a long period of years from a practical standpoint," the contractors declare in their statement. "We feel strongly our duty to present to you our views in the premises because our close association with the operation of the street improvement laws enables us to present angles of the problems involved which we do not believe can be given to you out of the experience of any other group.

"We have had representatives in attendance at practically all of the hearings held by your committee and have listened with a great deal of interest to the various recommendations and suggestions that have gone into the record and which are offered as cures for the ills which, it is represented, seem now to beset the property owner. We have also carefully followed all of the ideas and suggestions which have been made public through the press in recent months relating to street improvement law amendments. We believe we fully understand the very complex problems which now face your committee in connection with the substance of the matter to be contained in your final report to the Legislature.

"We have listened to recommendations submitted by those persons representing the tax-paying and property-owning groups. Many of these are very drastic in character and if adopted in toto or in substantial

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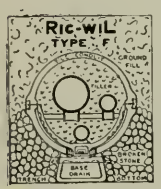

Cross section of Ric-wiL Type F Conduit with Dry-paC filler, multiple pipe installation. The entire weight of pipes and pipe supports rests on the Base Drain.

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part, would mean a complete overturning of our entire assessment procedure. We appreciate that these recommendations have been placed before your committee in all sincerity of purpose and undoubtedly those responsible for them feel that conditions at least in some localities, justify recommendations of such a drastic nature.

"It is our belief, however, that conditions are not as bad as they have been represented to you and that in the revision of legislation of this character, which is of such vital importance to every citizen of this state, we should proceed with due caution and not hastily adopt those radical changes which are offered as a cure-all, but which on calm analysis may be found to be unworkable theories, wide of the mark, and would of a certainty seriously endanger the whole structure of assessment laws.

"The idea of codification of the street improvement laws of this state is not a new one. The subject was thoroughly discussed by all interested agencies as early as 1911 and at that time it was decided that instead of endeavoring to codify the then existing acts, it would be better to embody the ideas of an improvement procedure in a new and alternative act. The street improvement acts of this state have been a matter of growth, closely coinciding with the growth, development and progress of the state, and as new and changing conditions have arisen, new procedures and new and alternative acts have been provided for the purposes.

"Codification holds forth no prospect of benefit or relief to property owners, but on the contrary will be conducive of much harm. The existing improvement acts which are in general use have the advantage of extensive adjudication in the highest courts of the state on all essential points. Codification will largely destroy the advantages and applicability of these judicial pronouncements and would give rise to an uncertainty which could not but promote an endless amount of new litigation which will cost a huge sum of money and add another load to the ever-increasing burden upon our already overworked judicial system.

"We, therefore, recommend against any attempt at codification and would suggest that the efforts of the committee be confined to an attempt at unification insofar as any practical benefit can result. If any particular acts are thought to be obsolete and of no further use, we would like to be advised as to which acts are so regarded so that we might express our views specifically upon them. We believe that codification will result in no value and is extremely impracticable.

"It will be impossible for us to include in a document of this kind any complete or thorough discussion of the many arguments involved in this subject of debt limitation, so we must therefore be content with pointing out a few fundamental procedural difficulties.

"First among these difficulties, we might avert to the absolute lack of any given starting point or basis upon which to base a limitations. Assessed valuations are notoriously not uniform as between the several counties and cities of the state and are not uniform within given counties or municipalities. Again, a debt limitation on the basis of assessed valuation, which would afford any measure of protection in certain localities where property is fairly well improved and of good value, would absolutely throttle all development in other localities not so well improved and of low value. This result would be inevitable and yet all must concede that values in real property do not normally precede the installation of local improvements, but rather follow them. In this age of automobiles and other modern conveniences, no one wishes to establish a home in a locality where there are no paved streets, sewers, lights or water, and yet a debt limitation which would thus allow these improvements to be constructed in advance of development, would allow the imposition of enormous assessments upon property already improved, or which happens to be located geographically in such manner that its values have been artificially stimulated by some factor other than the local development.

"If some standard of actual value is attempted to be arrived at as a basis for the debt limitation, the system is then brought back again into the field of judgment and discretion, with the same possibilities and opportunities for abuse that are complained of under the present system.

"If a given project is financially sound and a reasonable number of property owners desire it, it should go through. If it is financially unsound, the economic laws will take care of the situation and the securities will not be saleable. This is well exemplified by the conservative bond market conditions which have resulted from the difficulties experienced by certain bond houses that undertook to underwrite certain unsound projects. It is safe to say that there will always be a certain number of such unsound projects consummated, but in each instance it will result in a renewed vigilance on the part of the underwriting bond houses and the investing public in an effort to minimize the recurrences of such things as much as possible.

"We would, therefore, urge that the committee do not give serious consideration to the subject of debt limitation in state law and we feel confident that the recommendations hereafter contained in this document will point out to the committee a program which will satisfy all fair-minded persons.

"It has been proposed that the 30-year term of bonds for acquisition be extended to 40 years. To this proposal we have no objection, although we are inclined to feel that the 30-year period is sufficient.

(Additional objections will appear in the November Number)

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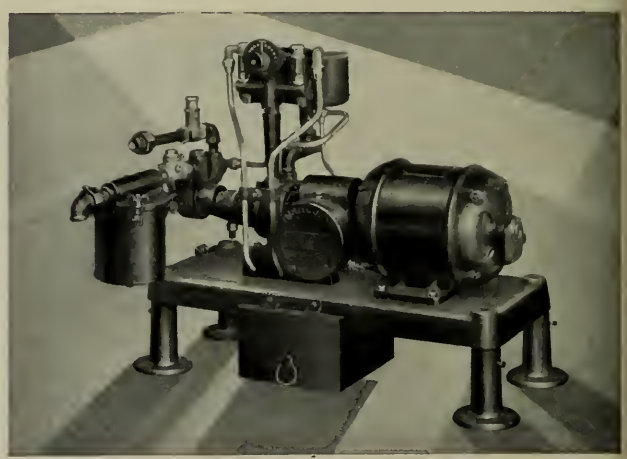

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THE ARCHITECT AND ENGINEER

Airport Number

NOVEMBER
1930

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OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD

Who's Who in this Issue

GABLE & WYANT, who have planned a number of airport structures for the Curtiss Flying Service and other organizations along the Pacific Coast, and as far east as Denver, have established a new note in the design of such buildings, in that they have achieved architectural merit in the appearance of their work, in addition to utility of plan, good structural design, and economy with respect to cost. Although members of this firm have achieved considerable recognition for the design of many fine residential estates throughout the Southwest, they have perhaps received equal, if not more credit for the merit of their industrial, institutional and commercial work, consisting of schools, womans' clubs, hotels, apartment buildings, banks, factories and numerous fine retail stores and shops. The firm of **Gable & Wyant** was established at Los Angeles in January, 1922. Both **George E. Gable** and **C. Stanley Wyant** graduated in architecture from the Engineering College, University of Illinois. Mr. Wyant graduated with first honors and is a member of the Honorary fraternities, Scarab & Tau Beta Pi. Mr. Gable also studied engineering at Iowa State College and he took post graduate work at the University of Wisconsin. Previous to entering practice Mr. Wyant was engaged for a number of years as a designer in several of the larger offices in both the east and west, and Mr. Gable was employed in an executive capacity in several of the well known offices in Detroit, Chicago, Seattle and Los Angeles.

HORACE GEORGE COTTON, Landscape Architect of San Francisco, whose "city garden" is described in this issue, is a native of Africa, where his parents were missionaries. He attended Ripon College Preparatory School and later Washington State College where he studied horticulture for five years. Later he took up landscape architecture with a distinguished Harvard graduate as his coach. Mr. Cotton received his degree after three years at the University of California. "And have been on the run ever since," is Mr. Cotton's happy way of concluding his biography. Several years ago Mr. Cotton won international recognition for his design of Brookdale Lodge in the Santa Cruz mountains, the unique feature of which is an open air dining room through which runs a murmuring brook.

MARC N. GOODNOW, who writes on Architectural Aspects of Pacific Coast Airports in this issue, was born in Salem, Ill., April 10, 1883. He was educated in high schools and University of Chicago. He entered newspaper work in Indiana, where he established the Gary Tribune in 1907. In 1911 he engaged in free lance magazine and newspaper and publicity work. Mr. Goodnow moved to Los Angeles in 1915 and conducted for some time a publicity and advertising office. He became part-time instructor in Journalism at the University of Southern California in 1919. He founded California Home Owner in 1922, conducting same, as editor, until 1928, when the magazine was merged with California Arts and Architecture. Since then, Mr. Goodnow has acted as Journalism Field Representative of the University of Southern California. During all the years spent in California he contributed to many national magazines, and since engaging in architectural publishing, has contributed articles on home-building, architecture and allied subjects to such magazines as **The Architect and Engineer,** Your Home, Arts and Decoration, Better Homes and Gardens, and the Christian Science Monitor.

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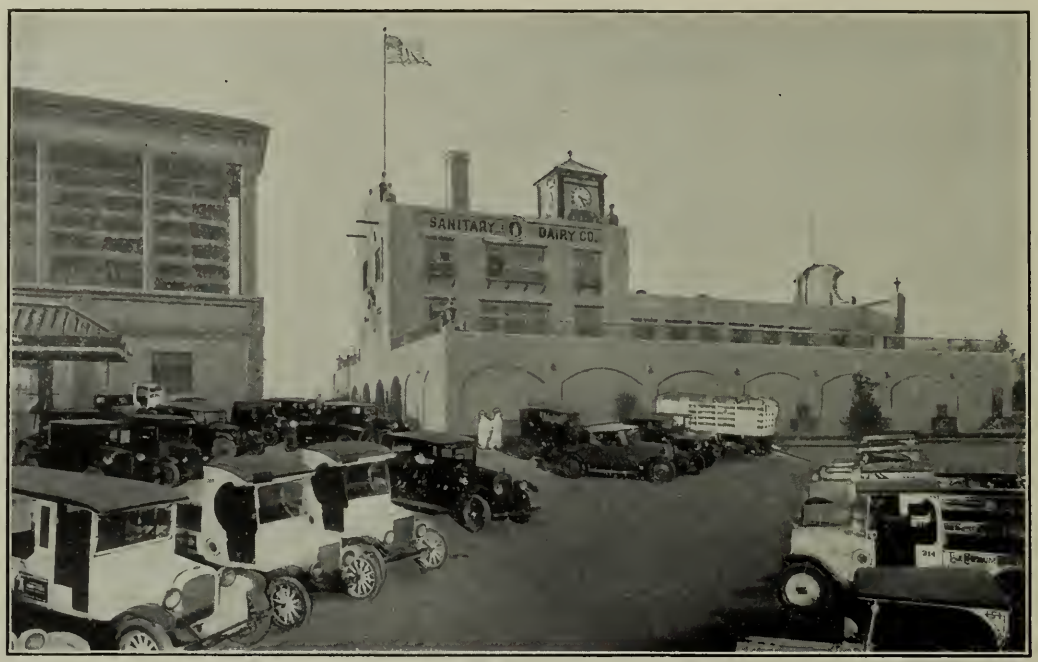

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VOLUME CIII
NUMBER 2

The ARCHITECT AND ENGINEER

NOVEMBER
1930

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THE "SOUTHERN CROSS" WINGING THROUGH THE GOLDEN GATE ON LAST LAP OF ITS AROUND-THE-WORLD FLIGHT

The ARCHITECT AND ENGINEER

VOLUME CIII NOVEMBER, 1930 NUMBER TWO

ARCHITECTURAL ASPECTS OF PACIFIC AIRPORTS

by MARC N. GOODNOW

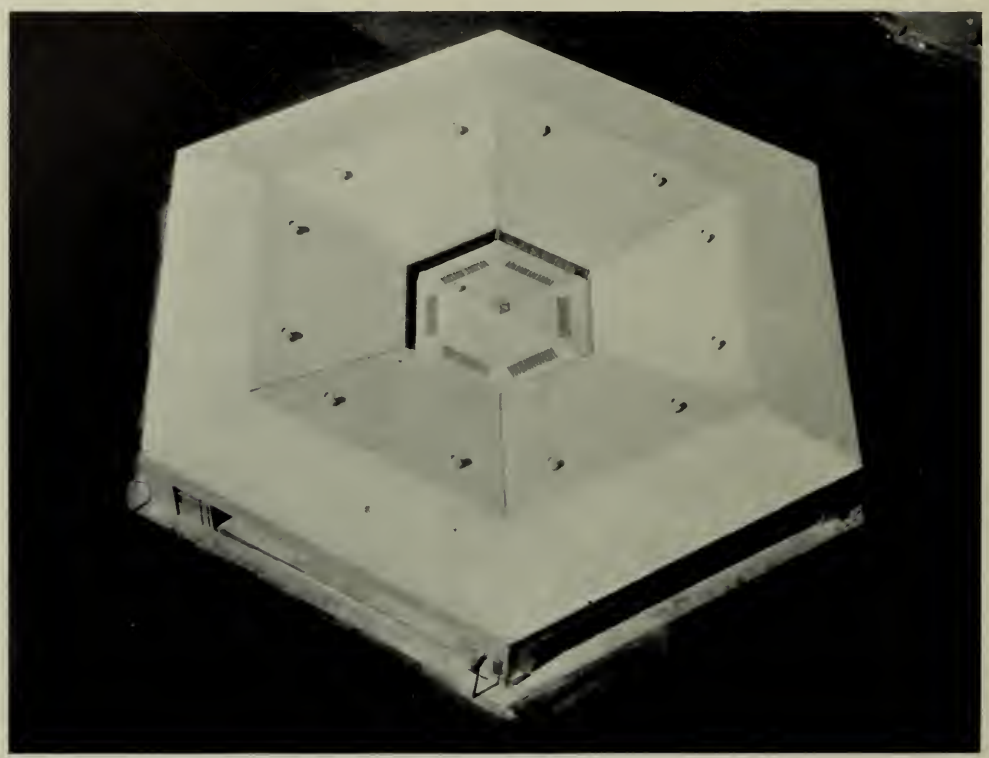
THE enormous growth of airplane transportation, with the location of landing fields and airports in cities, towns and even hamlets, has faced operating companies with the need for proper accommodations for pilots, planes and passengers, and at the same time, has brought to architects and builders not only new lines of business but fresh opportunities for the display of architectural and engineering ability. More rapid, in many respects, than the growth of the automobile industry, airport construction — including hangars, hotels, garages and even airplane clubs—has widened the scope of design and building to a scale at least comparable with that of the railroad.

The development of air-mindedness along the Pacific Coast is one of the impressive chapters in modern transportation. With more than 150 airports and landing fields, together with garages, manufacturing and repair plants and an investment of many millions of dollars, the entire industry has reached a permanence that warrants serious study on the part of both architect and builder.

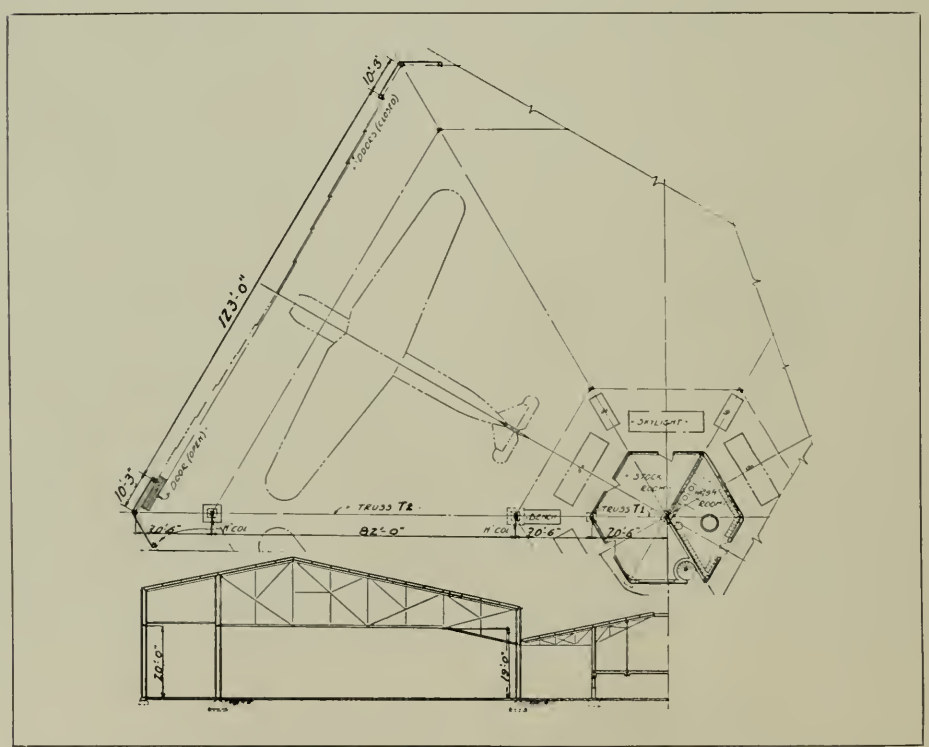
Southern California alone boasts 57 airports and landing fields, 17 factories and an output of planes and motors during 1929 valued at more than $5,500,000. A single passenger service transported 5200 people in that year. Then, too, there is to be considered the growing use of private landing fields and hangars on the estates of business men who own a plane or two for personal use.

The airplane club idea is growing, and this offers rather wide possibilities of an architectural nature. As more and more private planes come into use, the desire for club or social organizations will increase, with the prospect of an airplane clubhouse as an adjunct of practically every large airport or municipal landing field. The first Flying Club building on the Pacific Coast is that erected in Glendale, California, facing the landing field of the Grand Central Air Terminal, with full club accommodations for more than a score of members.

While a great deal of hangar construction was done by the United States government during the war, little took place in the way of airport construction. The army and navy landing fields were very large in area, so that the designer was in no way



HEXAGONAL HANGAR, WESTERN AIR EXPRESS, ALHAMBRA, CALIFORNIA
A. M. Edelman and A. C. Zimmerman, Associated Architects



PART PLAN AND SECTION AT TRUSSES T1-T2, HEXAGONAL HANGAR, ALHAMBRA
A. M. Edelman and A. C. Zimmerman, Associated Architects

cramped in laying out his field or buildings. This may have been an advantage to the architect, but it did not add greatly to the efficiency of operation because the various building units as well as units within a building were so far apart that both time and energy were lost in transferring operations from one to another.

With airports being placed in close proximity to large cities, and upon increasingly valuable land, however, there is now a need for greater compactness in planning. It is likewise recognized that, particularly in carrying on repairs within the hangar, both hangar construction and placement or handling of planes under roof should be such as to reduce time and energy to a minimum.

From the standpoint of planning, the airport architect's problem is an intricate one, by no means concerned only with the design and construction of buildings. In fact, few other types of planning seem to present the number of different factors and elements that are involved in the construction of an efficient airport. Safety of pilots, passengers and public is one point which involves very many other factors. Then there is drainage, floodlighting, signal lighting, taxiing facilities, runways, auto traffic and parking accommodations and fire-safety, as well as the further elements of practicality, convenience and efficiency of operation.

The multiplicity of factors involved in proper airport design and construction convinces one that the general problem is not one to be taken up lightly, without preparation, but one that really embodies a special science combining aeronautics, engineering and navigation as much as it does architecture. Perhaps it is because of that fact that few airport architects with whom the writer has talked have been at all ready to assert they have found the solution.

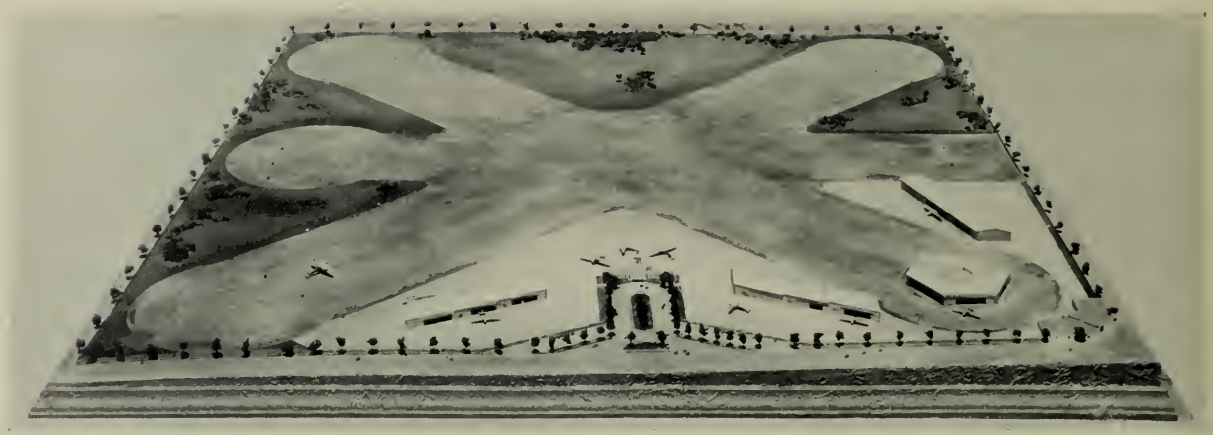
Under proper conditions, the architect's work would begin with the location of the field. Both the slope of the land and the character of the soil are important in planning runways and buildings, as well as providing the proper drainage for the site. If, for example, there is a sandy loam, with a sub-area of gravel, the expense of artificial drainage systems may be saved.

Any comprehensive study of an airport site should also include a survey of meteorological conditions, for visibility, fogs, strong variable winds, temperatures and rainfall have a great deal to do with location of the site as well as with the direction of runways and the placement of buildings. The survey of the Austin Co., designers and builders of the United Airport, Burbank, one of the newer projects in Southern California, reveals the exactitude with which the smallest item is recorded in determining the general plan of the port:

"Wind roses plotted from data acquired over a long period indicates a variation in wind velocity of from 0 to 32 miles per hour. The average daylight wind velocity is 8 to 12 miles per hour with no wind 10% of the time. The average night wind is less than 5 miles per hour with no wind 71% of the time. A prevailing sea breeze during the daytime follows a constant path through a pass in the hills several miles distant and is from a south to a southeast direction 83% of the time. The prevailing night breeze is from the northwest. Freedom from wind between 7 p. m. and 7 a. m. makes night flying at this airport extremely safe."

From this study it was determined that the shape and dimensions of the site would allow the construction of a system of runways approximately similar to the spokes of a wheel, which approaches the ideal circular field.

The layout of the Burbank field is so designed that an asphaltic concrete taxi area can be constructed around the runway approaches. This will allow the planes to taxi to any runway approach without crossing the runways themselves. There is provided an east-west runway 3600 feet long; a north-south runway 3000 feet long, and a north-west southeast runway 3600 feet long. This last runway extends in the direction of prevailing winds. The present width of the runways is 300 feet, with provision for increasing to 500 feet in width. Special attention was given to runway grading to insure perfect drainage, and no adverse grades were allowed. This makes for easy landing and uniform night illumination.



ARCHITECT'S MODEL OF WESTERN AIR EXPRESS LANDING FIELD, ALHAMBRA
A. M. Edelman and A. C. Zimmerman, Associated Architects

The maximum grade was about 1% on the diagonal runway and 0.5% on the east-west runway.

A plastic oil and sand mixture was used in the construction of the runway. This is a most satisfactory combination landing and take-off surface and was built up in two courses each 2½″ thick. After rough grading, the base course was prepared by mechanically mixing with the native soil, a specified amount of road oil especially refined to meet the requirements of this particular soil. The oil was applied under pressure from spreading trucks adapted for this type of work. The spreading temperature averaged approximately 250 deg. F.

AIRPLANE VIEW OF COMPLETED UNITS, WESTERN AIR EXPRESS, ALHAMBRA, CALIFORNIA
A. M. Edelman and A. C. Zimmerman, Associated Architects

After the oil had penetrated, the base course was prepared by mechanically mixing with scarafiers, blades and other special grading equipment until all particles were thoroughly coated with oil. The surfaces were then dragged and rolled compact, after which the 2½" top was applied.

This course was similar to the base except the aggregate was a hot plant mixture of scientifically graded sand aggregated and 60% to 70% asphaltum of 80% penetration. The material was carefully controlled as to quality and uniformity. This plant mix was applied hot, after which it was dragged, leveled and rolled. The resultant runway was 5" thick and has a surface sufficiently resilient and soft for easy landing without ground looping, yet compact and hard enough to prevent deep ruts from tail skids and the tires of heavy planes.

The large turn-around and take-off areas at the end of the runways were given a top course containing binder with a higher asphalt content than that used for the landing areas. This surface, while resilient, is much harder and allows rapid take-off for outgoing ships. These take-off strips are 450 feet long and increase from 300 to 400 feet at the widest section, being of sufficient size for airplane formations.

The taxi and dead ship areas located between the runway border and the administration area are of asphaltic concrete pavement construction. There are more than 2,000 lineal feet of this area, 150 feet wide. The maximum grade has been kept down to less than 1% to facilitate the handling of dead ships. Parking strips of concrete having an oil resisting surface are provided at strategic locations in this area. The warming-up aprons in front of the hangar doors are 150 feet square and of concrete construction.

Vacant areas between runways have been graded to allow safe emergency landings. They are planted with alfalfa, which in addition to acting as a dust palliative, will minimize heat and glare. The alfalfa is irrigated by a flooding system with water furnished from a 14" diameter well 250 feet deep located on the property.

Freedom from hazardous obstructions may be considered a logical part of airport planning, since unless this is provided in the beginning the planning will of necessity be affected. It should even be remembered that mental hazards are quite as important as actual hazards, because of their disconcerting effect upon pilots and consequent danger to passengers. Necessary obstructions on the flying field should be grouped as closely as possible. In planning, the location of hazards—such as flagpoles, telephone and electric light poles, smoke stacks, etc.—surrounding the airport should be taken into consideration.

Visibility, both day and night, is, of course, the main objective on the field. All power, lighting, telegraph and telephone lines should be carried by underground conduit. Even irrigation pumps near runways may be located entirely under the ground. Where obstructions are necessary, warning lights should be provided. To increase visibility, the roofs of all hangars and industrial buildings at United Airport have been coated with special white crystallite marble chips. The side walls and roofs of all buildings are flood lighted, with fixtures concealed as much as possible and the beams so directed as to minimize all undesirable glare. All obstruction and boundary lights are on a 2300 volt series circuit to conform with Department of Commerce AIA regulations. The boundary lights are each approximately 1000 illuminums, spaced every 300 feet around the field, with the exception of the five runway approaches, where they are spaced 150 feet apart. A large illuminated wind tee and wind socks are part of the lighting system. A white crushed stone airport field sign has also been provided.

Since the lighting installation, control and effects at the United Airport are perhaps the latest yet installed on the Pacific Coast, it should be of interest to mention further details of the illumination system there.

The Neon beacon situated on top of the tower of the passenger terminal building is composed of four vertical tubes surmounted

by the Neon beacon. When in operation, the vertical tubes furnish a penetrating red light which illuminates the mission tile roof of the tower. This light gives constant illumination, while the Neon globe above is designed to flash in code the name of the airport. The light of this portion of the beacon is also red, which, on account of its short wave length, has superior qualities of penetration.

for 20 miles. The beacon is said to provide a highly penetrating light without glare. A complete automatic system of dual remote control of the various outside lighting circuits has been worked out, making for ease and safety of lighting operation. This system can be operated manually or by especially designed astronomical time clock, which coordinates the lighting with the actual sunrise and sunset during every

WESTERN AIR EXPRESS DEPOT, ALHAMBRA, CALIFORNIA
A. M. Edelman and A. C. Zimmerman, Associated Architects

In designing the exterior flood lighting system over the terminal, particular attention was given to keeping the light from shining upwards, which might confuse night fliers. The problem of flood lighting the vertical walls of the terminal tower was solved by placing cove in the overhanging eaves of the roof. These cove lights are each made up of two 100-watt lamps and there are six reflectors on each of the four sides of the tower.

Future lighting plans provide for a Stone lens revolving beacon which will be visible

season of the year. Electrical distribution, underground, for all power and lighting requirements is furnished from a central system and controlled and operated by the airport management. This includes power to the various industrial plants on the property.

Hangar construction, in the opinion of many architects, presents the outstanding problem in airport building. Proportions, spans, shape of structure, doors and fire-prevention—these are the most prominent of the factors involved. The traditional

form of the hangar, until recently, has been rectangular. Where, however, it is combined with administration headquarters, waiting room and various offices, as at the Los Angeles Municipal Airport, it has become a medium of attractive architectural expression, with a variety of shapes. The hangar for the Western Air Express, Alhambra, which is for airplane service only, was planned in the form of a hexagon.

NIGHT VIEW OF WESTERN AIR EXPRESS DEPOT, LOS ANGELES
A. M. Edelman and A. C. Zimmerman, Associated Architects

The Curtiss-Wright Flying Service hangar, designed by Gable & Wyant, architects, and built at the Los Angeles Municipal Airport, is unique in that it is one of the first attempts to erect a hangar with a distinct traditional architectural style, and at the same time not sacrifice any of the practical requirements which are imposed by buildings of this character. The building is designed in the California-Spanish or so-called Mission style.

The main portions are of stone-tile walls, brush coated in a light color, with tile roofs forming a brilliant contrast to the walls. Aside from the hangar space of 110'x117', the building contains administration offices, with waiting room for use of the public, a large lounge for students' use, class rooms for instruction of students, large airplane repair shop, engine repair shop, stock room, offices for meteorological observations in the main tower, a lounge and accommodations for women student flyers, together with locker, toilet and shower rooms. A prominent feature on the flying side of the building is an observation deck on the second floor, running the entire length of the building, reached by stairs from the waiting room, for the use of the public in viewing flying exhibitions and general activities on the field.

The doors to the hangar proper, which is open at both ends, are electrically operated steel doors, hinged at the center in two sections vertically, and counterbalanced so that both sections slide up vertically, throw-

UNITED AIRPORT LANDING FIELD, BURBANK, CALIFORNIA
The Austin Company, Designers and Builders

ADMINISTRATION BUILDING, UNITED AIRPORT, BURBANK, CALIFORNIA
The Austin Company, Designers and Builders

ing the hinge outward and horizontal with the top of the door opening. When the doors are open they are up out of the way and leave a clear unobstructed full-width opening. This is one of the first installations of steel hangar doors of this particular type.

The hexagonal hangar designed by A. M. Edelman and A. C. Zimmerman, associated, architects for the Western Air Express, Inc., Los Angeles, is an outgrowth of the principle that minimum cubic contents make for economy and that the type of shelter should be adapted to the size and shape of the airplanes to be housed. In this structure, the airplane comes in tail first, the wings being nearest to the door.

Repair shops, storerooms, wash rooms and the like, which are usually housed in a lean-to with other types of hangars, are placed in the center of this building, with six skylights above. Thus the entire control of operation is concentrated into a comparatively small area, with men working out from the central point rather than traversing the entire length or breadth of the hangar for instruction or tools.

Each of the hexagonal sides measures 143 feet, 6 inches in length; the maximum diameter is 287 feet. Roof support is gained from 24 columns. The door openings are 122 feet, 4 inches wide, by 20 feet high. Each door consists of 12 panels supported on rails and sheaves, with grade channels above. The cost of construction of this building, which covers 53,800 feet, is said to have been $1.69 per square foot, due largely to the fact that no heating plant is required and that the roof is non-insulated.

The rectangular type of hangar has been used at the Grand Central Air Terminal, Glendale, designed by H. L. Gogerty, architect. One of these measures 800x130 ft., with firewall in center, while two others measure 240x130 feet, with fireproof construction. They are of trussed design, fitted with monorail crane systems for picking up and transporting motors to and from the repair shop.

Concrete and asphalt runways are provided here, with signal and flood lighting controlled from a central tower above the administration building. The style of the building is Spanish, with modern interior. Besides a central lobby, this structure houses a series of business offices, restaurant, telephone and telegraph facilities and other features of service to air passengers.

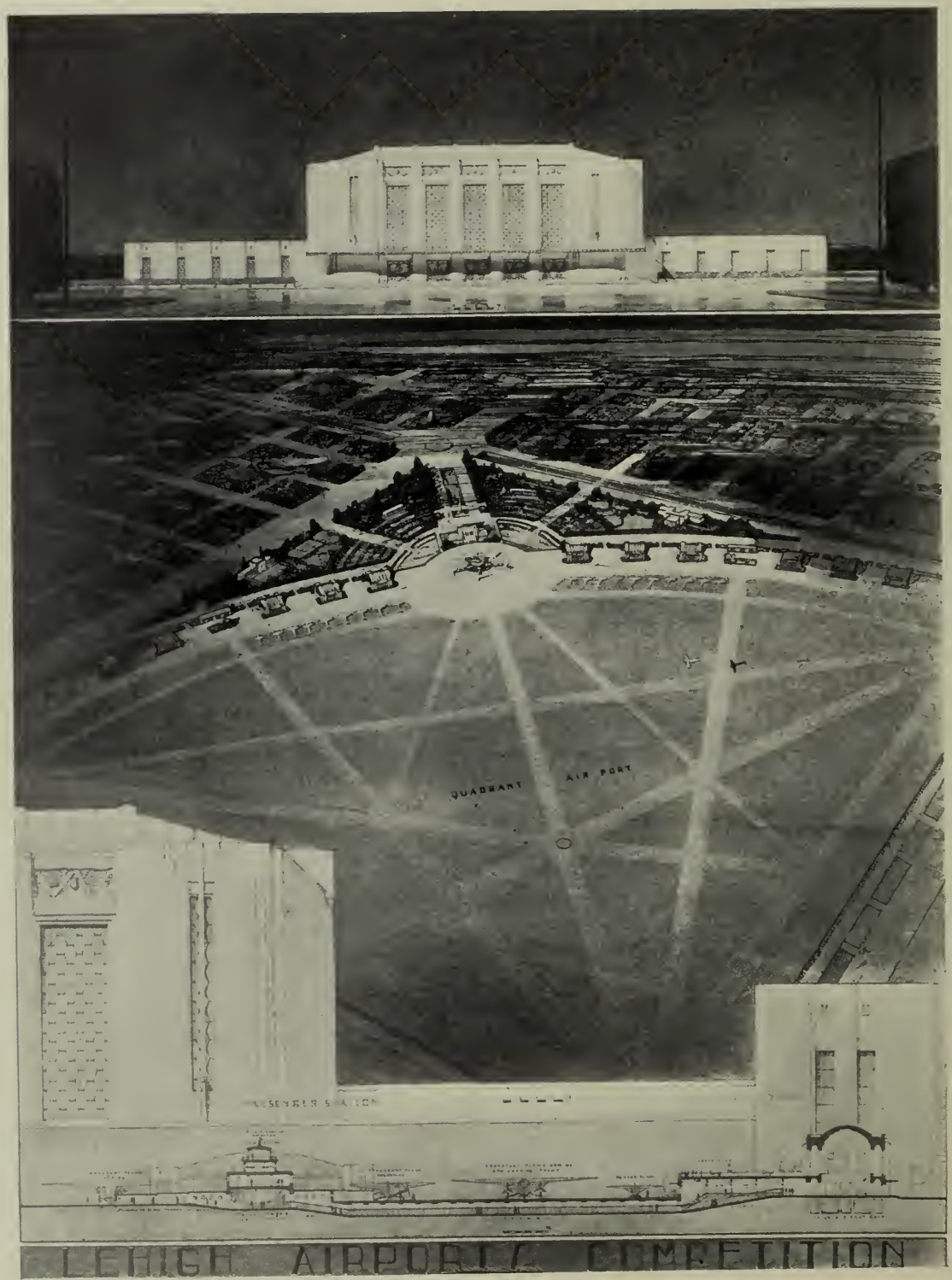
A combined hangar and office building of typical Spanish-Aztec architecture is that designed and built by the Austin Company for Scenic Airways, Inc., Phoenix, Ariz. Not only is it unique in design, but the structural steel frame is designed with cantilever trusses, with 20′ clearance from floor to bottom cord of trusses. The building measures 110x120 feet, a one-story extension on the front containing office, work shops, toilet and shower rooms. The interior offers a clear, unusually well-lighted area free from any columns or obstructions and allows for almost unlimited expansion Planes with a wingspread of 150 feet may be easily accommodated.

The two transport hangars erected at United Airport are rectangular in shape. Both are 200x150 feet over all. This includes an office and shop lean-to 200x25 feet. The hangar proper has a clearance under the truss of 22 feet. Glazed steel hangar doors of the "slide-around-the-corner" type are furnished in either end.

Approximately 50% of the side wall area of these buildings is steel sash. The floors are of concrete and slope 0.5% from one end of the hangar to the other. In addition to special electrical power, gas and plumbing installations there is provided a hot and cold water system for washing planes.

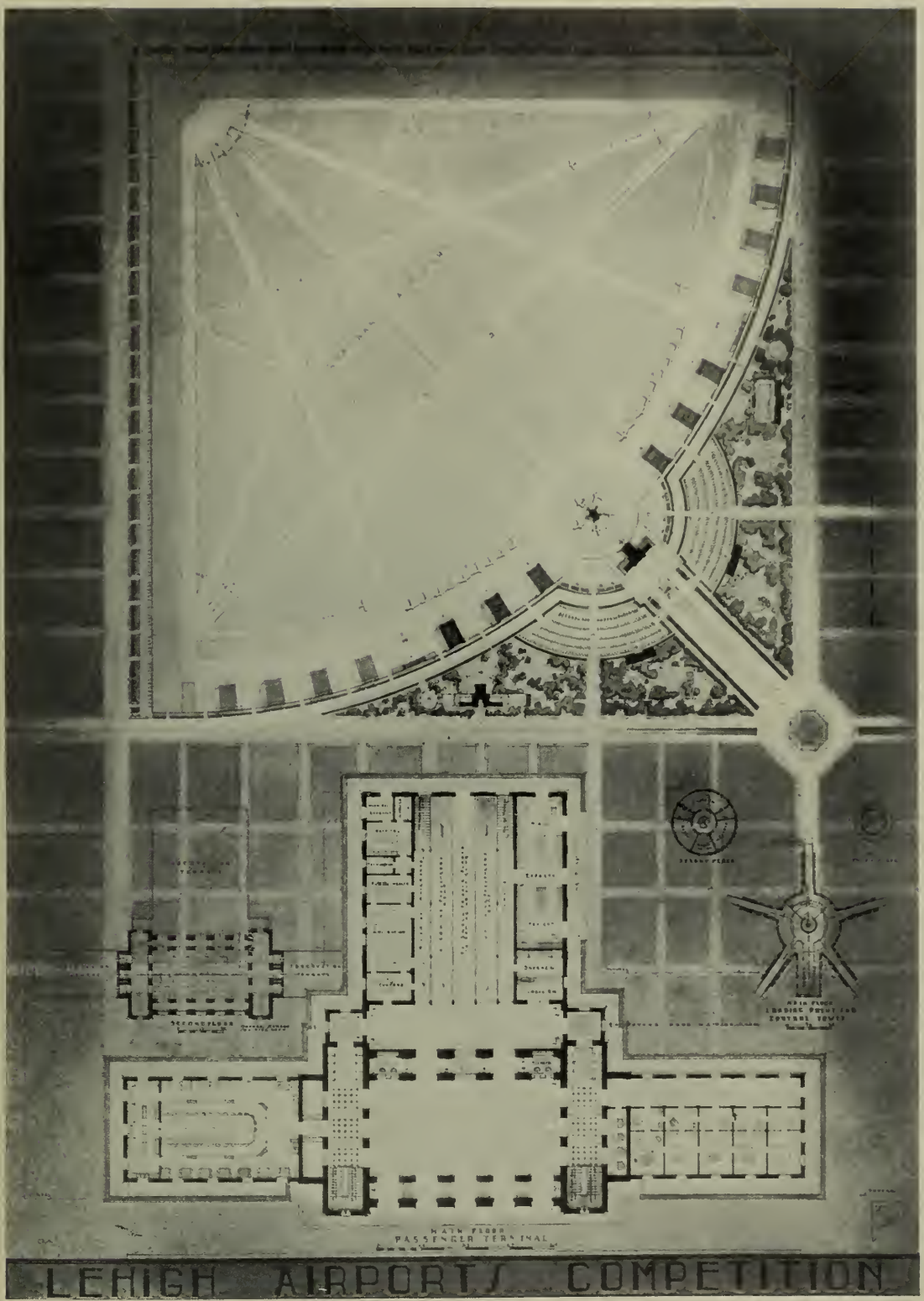
The terminal building at the United Airport is of Spanish design. In plan it is a three-story reinforced concrete tower, with one-story curved wings extending from either side of the tower. The roof decks of these wings are designed with a live load sufficient to care for large public gatherings. The present building is 200x60 feet over all, with provision for an additional story, if desired.

The main floor of this structure is occupied by a public waiting room, offices and



PERSPECTIVE, WINNING DESIGN, LEHIGH AIRPORTS COMPETITION

A. C. ZIMMERMAN, ARCHITECT AND ENGINEER, AND WILLIAM H. HARRISON, ASSOCIATED



WINNING DESIGN, LEHIGH AIRPORTS COMPETITION

A. C. ZIMMERMAN, ARCHITECT AND ENGINEER, AND WILLIAM H. HARRISON, ASSOCIATED

PERSPECTIVE, GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIFORNIA
H. L. Gogerty, Architect

display rooms, kitchen, restaurant and public toilets. The second story of the tower is reserved for the use of the U. S. Weather Bureau and Radio. The third floor is for observation and operations management.

A special finish on interior woodwork was created—a silvery driftwood effect on antique mahogany. The interior combines the Spanish style of the exterior with the utilitarian architecture. The broad upward sweep of the architectural lines in the interior is suggestive of flight, which motif is further carried out with aeronautical emblematic designs in the decorations.

The terminal is equipped with a modern and complete kitchen, dining room and coffee shop. This equipment includes electrical refrigeration units, electrical dish washer, warming ovens, cooking range, vegetable sinks and ventilating system. The kitchen floor is treated with a special grease proof surface. The coffee shop has a counter capacity of 25 stools and has complete fountain equipment. The dining room seats approximately 200 people and there is a private dining room available for special parties. A dumb-waiter connects the kitchen with the second floor deck, where lunch and afternoon tea may be served while the diners watch flying activities on the field.

The field entrance of the terminal is through five double doors on to a concrete area, covered by a mission style canopy as a protection from the winds. Passengers are further protected from propellor wash and inclement weather by a telescopic metal canopy operated on a steel track. This canopy is in two sections, each 23 feet in length, 10 feet in width and 7 feet in height. It is easily operated by one person and is provided with control brakes so that it can be stopped quickly as it is extended toward the plane.

DEPOT, GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIFORNIA
H. L. Gogerty, Architect

ARCHITECTURAL TREATMENT OF THE AIRPORT

by FRANCIS KEALLY in Current Architecture

AVIATION is the great transportation method of the future. We must look at it in a "big way" in order to avoid mistakes in the planning of airports. The great air port at Croydon, England, for example, was completely rebuilt two years ago at an expenditure of $1,000,000. All the obsolete buildings were razed, and I understand that these buildings originally cost $600,000. It is a fact that $300,000,000 has been spent in this country on airports by more than 1000 communities since Colonel Lindbergh landed at Le Bourget; and it is reasonable to suppose that an additional $200,000,000 will be spent by another 100 communities in the next twelve months.

Our future tourists undoubtedly will make their trips by airplane, not only for the better view of the country which they will be able to get from the domain of the eagle, but also because they will be able to cover a much larger territory in a much shorter time. I can well imagine there will be some day an airport on Pike's Peak and

Photo Mott Studios

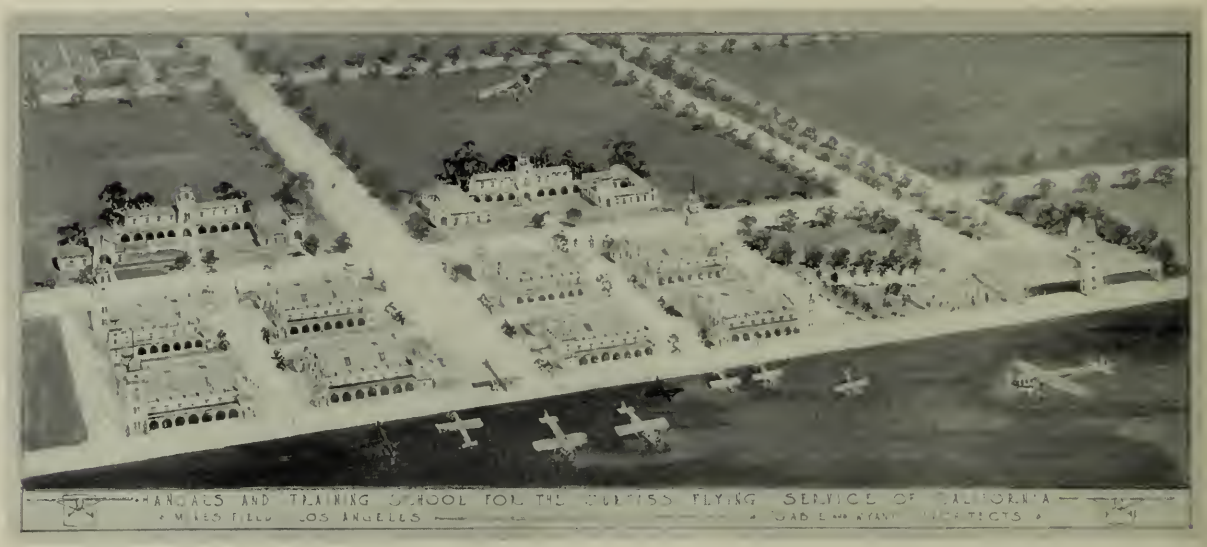
GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIFORNIA

H. L. GOGERTY, ARCHITECT

Photo Mott Studios

GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIFORNIA

H. L. GOGERTY, ARCHITECT



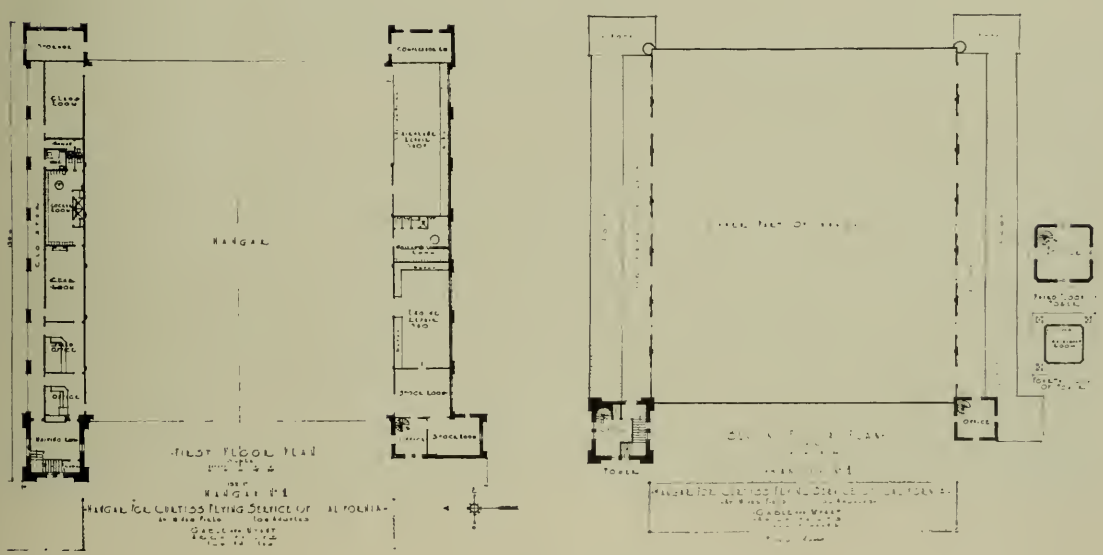
HANGARS AND TRAINING SCHOOL FOR CURTISS FLYING SERVICE, LOS ANGELES
Gable and Wyant, Architects

Photo by G. Haven Bishop

HANGAR FOR CURTISS FLYING SERVICE, LOS ANGELES
Gable and Wyant, Architects

Photo by Moss

HANGAR FOR CURTISS FLYING SERVICE, LOS ANGELES
Gable and Wyant, Architects



PLANS, HANGAR FOR CURTISS FLYING SERVICE, LOS ANGELES
Gable and Wyant, Architects

Photo by Moss

HANGAR FOR CURTISS FLYING SERVICE, LOS ANGELES

GABLE AND WYANT, ARCHITECTS

on other lofty mountain tops. Nor is there any logical reason why airports cannot be built in the neighborhood of great canyons so that tourists can get the greatest variety of scenery.

Just as modern architecture and design now is building up an American art which best expresses the kind of civilization in which we live, so will the architects and engineers of our airports take into consideration the surroundings in which the airports will be constructed. There is no reason for having a black airport on Pike's Peak, for instance, where the underlying color scheme is wind-driven snow. Nor should an airport built in the desert resemble a kaleidoscope; rather its coloring should resemble the desert in which it is built. The sand, and the cactus should suggest the color scheme.

There will be airports for business men who are in a hurry. These must be situated close to great centers of population so that little time will be lost in going from the terminal airport to the business and hotel districts. Suburban airports will be located some 100 to 200 miles distant from great centers like New York which means that commuting distances will increase, on account of the speed of the airplane. In short, the airplane will make great distances seem less than the present short distances. Farms and virgin country within a radius of 200 miles of great cities will be made accessible and developed in the same way that territory close to centers of business have been developed by train and motor car transportation.

A system of air taxis probably will be developed. It would be impracticable to land a large transport plane, carrying from 10 to 25 passengers, atop a wharf or upon the roof of a great railway terminal in the heart of a big city. Manifestly, such a heavy plane would have to land at one of the big airport terminals. But there is no reason why transportation should then revert to the present automobile taxi. How much simpler to transfer from a large plane to a small one, and travel through the air the ten miles or so that separates the airport terminal from the heart of the city! The small plane could easily land on the decks of our great ocean-going airplane carriers.

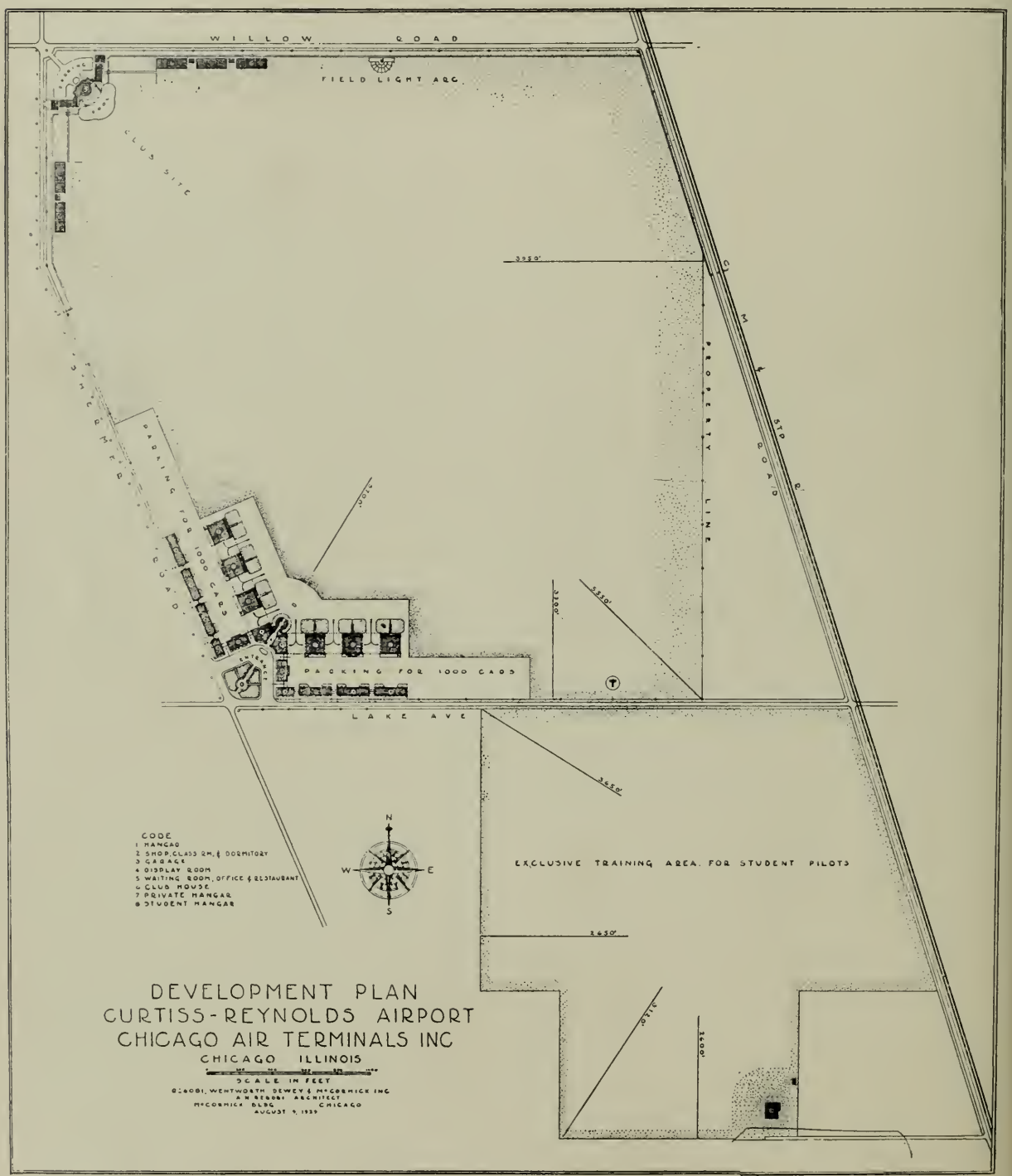
Many architects have even suggested that landing stages be built in units above the wharves or unobstructed waterfront streets, or above the railway switching yards of cities. These platforms would be built on a unit plan, each unit affording space for the landing of a small plane which would bring in passengers from airport terminals. As it is very important to expedite the handling of air mail from large airports in the suburbs to the cities, it is suggested that the landing platforms over piers or wharves be equipped with pneumatic mail tubes. Thus a letter posted in Boston at 11 o'clock in the morning might be received by the addressee in New York at 3 o'clock the same day.

Assistant Postmaster General Irving Glover told the Congressional Airport Commission for the District of Columbia, recently, that the day is not far distant in the development of air mail service when post offices will be connected with landing fields by pneumatic tubes for the speedier handling of mail.

Few persons realize how wonderfully efficient pneumatic tubes are in the carrying of mail in New York City alone. They average over 140,000 carrier miles per day, equal to a journey fifty and two-thirds times around the world. This magnificent system for the swift transfer of mail under the streets of the city can and should be linked with the swift transfer of mail by airplane to and from distant points.

Express parcels and the more valuable and small type of freight also will be carried by airplanes in the future. So, great airports must be erected with every facility to handle arriving and departing planes every few minutes—and with a large organization of mechanics and personnel such as is required in a great railroad terminal.

It is most important that airports not only be made beautiful—utility of course is the prime essential—but that they be built to provide for future expansion of at least



DEVELOPMENT PLAN, CURTISS-REYNOLDS AIRPORT, CHICAGO, ILLINOIS

A. N. REBORI, ARCHITECT

one hundred percent or even more near-large cities, where, like railroad terminals, it will be economical to have as many air lines as possible converge at one terminal. Thus passengers will not be obliged to transfer from one terminal to another. Instead, upon arriving in one plane they will be able to take off in another for their ultimate destination.

The airport should be part of the city plan and every city planning commission should take it into consideration. Even in China, experts are being employed to lay out airports, for they find the airplane is the cheapest method of transportation, since it is unnecessary to build roads or to tunnel through vast mountains.

If aviation is to develop to its full stature, it must have the best and most modern terminals that can be built. For this reason it must enlist the services of the architect, engineer, the city planner, just as it has enlisted the scientist, the navigator, and the motor expert.

Among the facilities which the airport of tomorrow will have—and which the airport of today should have — are hangars, parking spaces for planes and automobiles, a hotel, a terminal station with ticket offices, incoming and outgoing passenger waiting rooms, shops and concessions. An airport news stand should be able to sell current-day newspapers from cities within a thousand-mile radius. The fashion shops should be able to show the latest styles which have come off the Paris boats. As surely as aviation will develop into one of the most important factors of our civilization, so surely will the airport of tomorrow concentrate all the activities of a community within its boundaries.

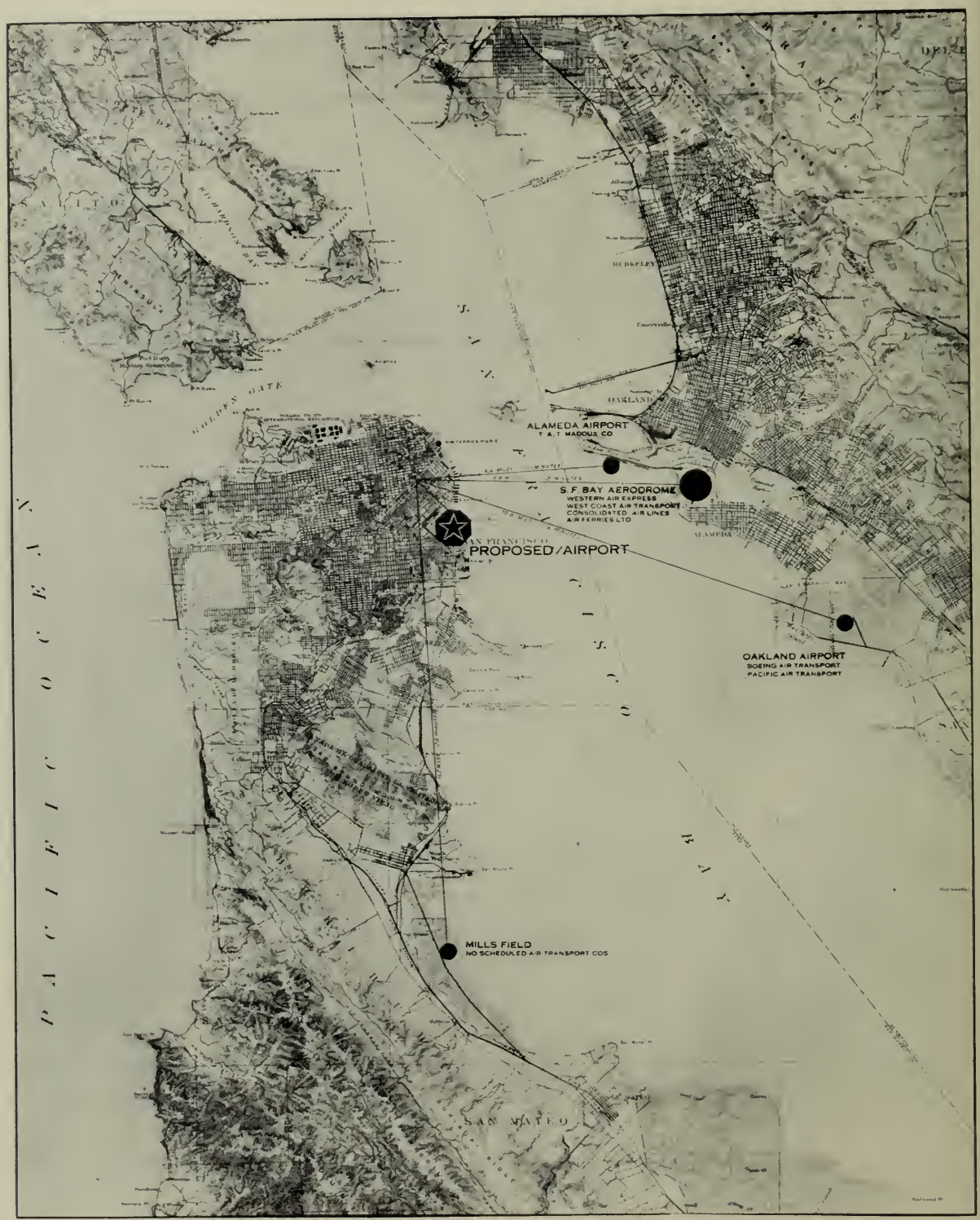
What is really needed and what has been accomplished at Tempelhof and at Croydon is the cooperation of the architect, engineer, and city planner. Manifestly, the modern airport should be comparable to the modern railroad terminal. This does not mean that American communities, beleaguered on all sides with financial commitments of one kind or another should construct an airport that will be able to handle the air traffic of 2000 A. D. It does mean, however, the expenditure made today, whether it be $100,000 or $1,000,000 should be sanely spent. The money should be invested with imagination and with an eye to the future, so that when aviation does develop, it will be unnecessary to scrap the original investment.

The airport must have an atmosphere of dignity and permanence. It must create confidence in aviation, an end that can be accomplished through beauty, as well as through orderliness of technical procedure. That aviation is giving a new and novel twist to an ancient point of view—the bird's eye view—is known. Now that we have been given strong mechanical wings, we can look down upon the world to which gravity has fastened us for so many ages. We can see clothes lines on the roof, tangled aerials, unkempt back yards. The roof is becoming the facade of the house.

Our airports, too, will be exposed to the critical view of the man in the sky. We may or may not adopt the method of Andre Le Notre, who, in his grand plan of palaces and gardens for Versailles, used colored pebbles to give to the ground the effect of a garden. Whatever we do, certainly we must combine beauty with utility. If we do not, an aroused citizenry will rebel at the grotesqueries which were thought to have been discarded years ago.

I believe an airport can be made a real civic center, a place for recreation and entertainment, as well as for the business of flying; a place citizens can visit with pride and where they can spend idle hours pleasurably.

Within five or ten years, I believe every large city and many towns of secondary importance will require a landing field just as they have required railroad stations. This landing field, because of its importance in area and because of the city traffic it will necessarily draw, will become a major feature of the community.



MAP OF AIRPORTS IN THE SAN FRANCISCO BAY REGION, SHOWING LOCATION OF PROPOSED FIELD. NAMES OF COMPANIES ENGAGING IN SCHEDULED AIR TRANSPORTATION APPEAR AT EACH AIRPORT.

PROPOSED AIRPORT FOR SAN FRANCISCO

by CHARLES HOBART BALDWIN

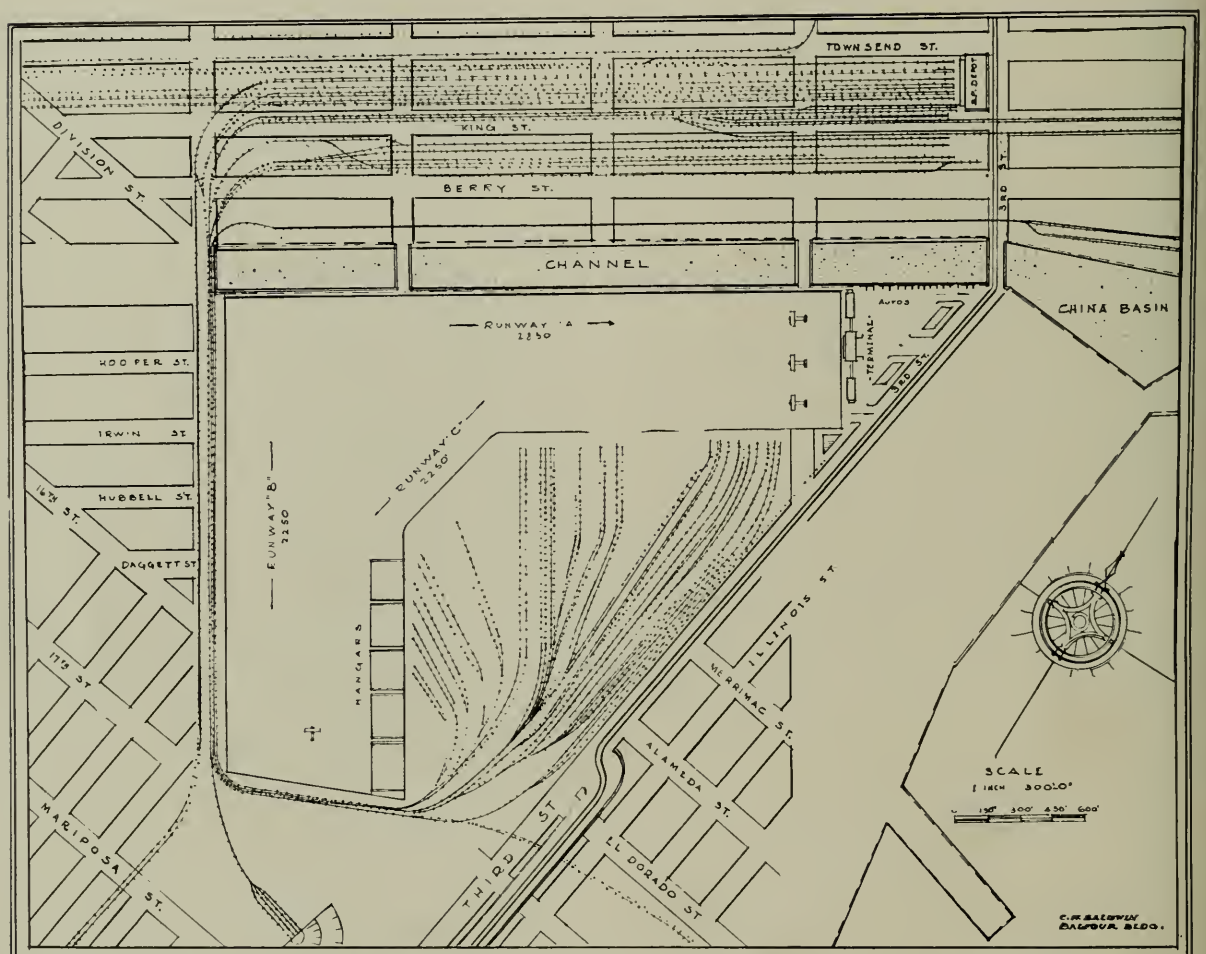
EVERYONE knows that commercial aviation offers such an improvement in local as well as in long-distance transportation that no community can afford to be without a suitable air terminal. Cities whose land values are high must expect to pay more for this public convenience than relatively undeveloped places; and they should strive to provide sites even more centrally located than their railway terminals when this is practicable. The present very slow travel conditions between San Francisco and neighboring cities create a particular need for the new carriers here, and San Francisco should at once take steps to give them access. Transport planes will solve the commuters' problem, and, by extending commutation to all points within a large radius of the city, will increase the real estate value of every acre of land in the Metropolitan Area.

While a survey of California airports shows that the Los Angeles district has sixty such facilities, and the remaining communities in the state a total of one hundred eighty San Francisco can point to but two—both of them unsuitable for commercial aviation. Crissy Field, in the Presidio, is merely a landing strip, not an airport, and is used mainly in connection with army flying. It is out of the question as a passenger terminal on account of insufficient area and the dangerous hills directly alongside. Mills Field, the present San Francisco municipal airport, is, to begin with, outside of the county —it is a five-dollar taxi drive away from the center of the city—and it has the defect of insufficient dimensions, which disqualify it for the Federal "A 1 A" airport rating, since it cannot provide an effective runway area of 2500 feet in all directions. Mills Field is even more distant for San Francisco's purposes than are the three airports that are now in operation in Alameda County, being slightly further from the heart of San Francisco than the Oakland Airport or the new San Francisco Bay Airdrome. With all the effort that has been expended upon Mills Field, it has been deserted by practically every commercial enterprise of any consequence that has been there: Western Air Express, Maddux Pacific Air Transport, and other lines which used to be there have moved to other airfields, mostly in Alameda county. The importance of having an airport close to the center of population is seen in the fact that the splendidly equipped Oakland Airport has within recent months been abandoned by most of the Air Transport Companies that formely used it and they have now transferred this service to the less complete but better located San Francisco Bay Airdrome. To build our San Francisco airport twelve miles from the heart of town is as absurd as it would be to have our railway terminal at San Bruno, instead of at the Ferry Building, or at Third and Townsend Streets. Unless we build an airport actually in the city, and near to the heart of its business, San Francisco's great and growing air commerce will be permanently monopolized by the more accessible airports of Alameda County.

It is not merely feasible, it is essential that San Francisco have her own airport; and perhaps one first-class one will be as satisfactory as sixty indifferent ones. This airport must be on a comparatively flat site, must be adequate in area, free from the down-draughts that accompany neighboring hills, and clear of dangerous obstructions.

It should conform with the highest Federal standards for an airport, and it must be centrally located, since if air terminals are not reasonably near destinations, air travel loses one of its main advantages—the element of time-saving.

the estuary, while the airplane hangars are placed along other sides of the octagon. To avoid a confusion of services the terminals are separated from the operating departments,—these terminals providing ticket offices, waiting rooms, a lunch room, a



AN AIRPORT IN SAN FRANCISCO ADJACENT TO THE S.P. Co. FREIGHT YARDS.
WITH TERMINAL OFF THIRD ST. JUST SOUTH OF THE CHANNEL.

The proposed airport for San Francisco as shown on the accompanying drawings, is situated at China Basin, three blocks below the Southern Pacific railway terminal at Third and Townsend Streets. A most important advantage in this sheltered site is that it accommodates seaplanes as well as other craft. In the pictures the seaplane and airplane terminals are shown face-to-face, the seaplane hangars being ranged along

small immigration bureau and passengers' conveniences. The Field Control Radio, and Meteorology services, together with space for Federal inspectors, physician, etc., are combined in a single building. The mail and freight building, equipped with loading facilities for both classes of ships, is placed in easy access to trucks coming from the city. The terminals are provided with promenades for observers, arranged

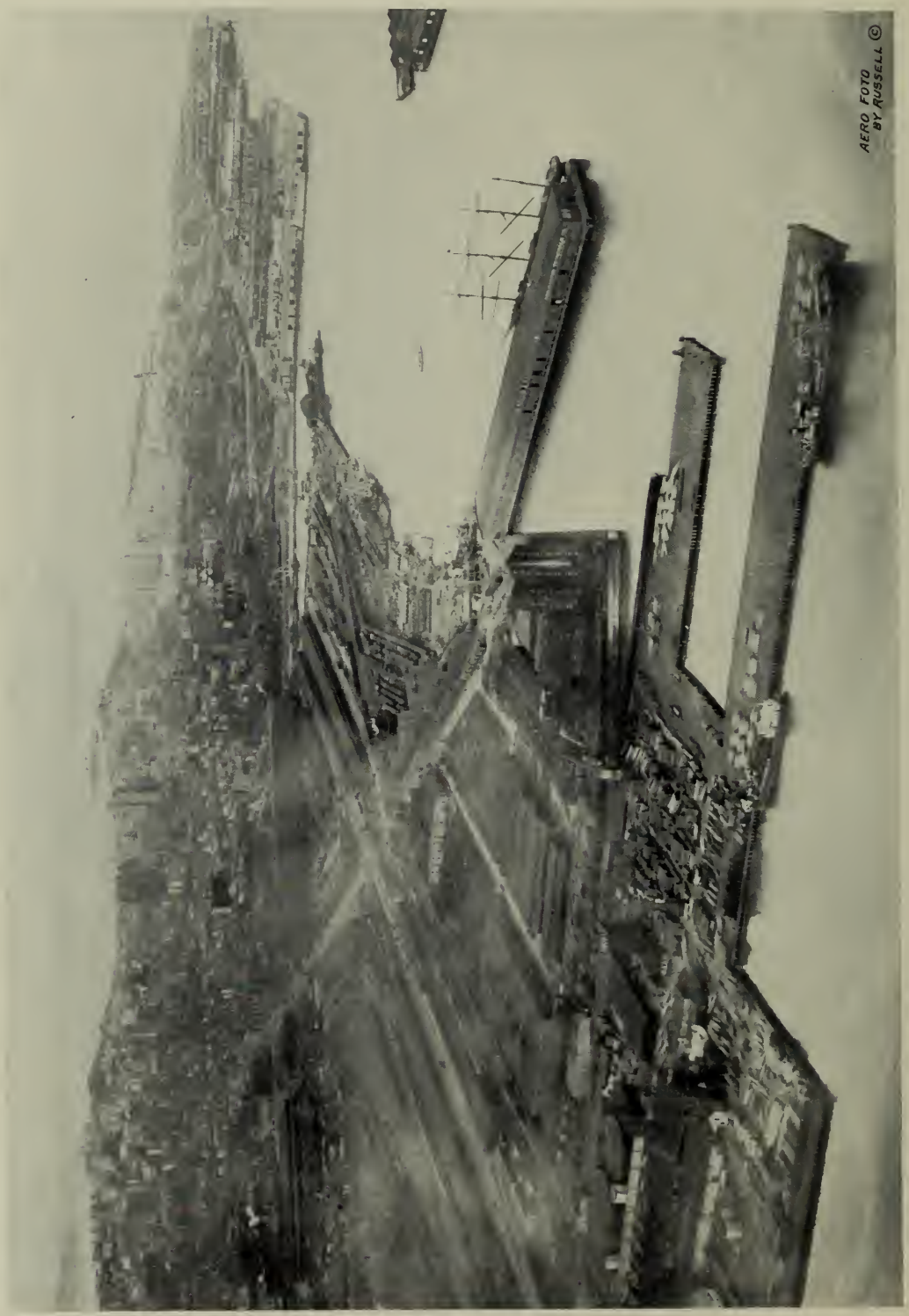
so as to prevent the entry of unauthorized persons into the flying area; and ample parking space is shown around the buildings and along the whole esplanade. A restaurant and hotel concession on the edge of the Bay is also shown on the drawings and would be an attractive feature.

The field provides a 300 foot effective landing area in all directions, and is equipped with double concrete landing pavements 100 feet wide that extend in the eight cardinal and quarter-points of the compass; and a continuous concrete apron for taxiing surrounds the whole field. It will be noted that passengers to and from these terminals are served directly by the Third Street railway, that they have more direct communication with the center of the city than is afforded to patrons of the new amphibian company now operating at Pier 5 on the Embarcadero, and that down-Peninsular passengers have close access to the Southern Pacific railway trains at Third and Townsend Streets. Moreover, the diversion of the air-traveling public to Third Street will greatly reduce the congestion of lower Market Street, while the Third Street artery will be much improved as an outlet from the city.

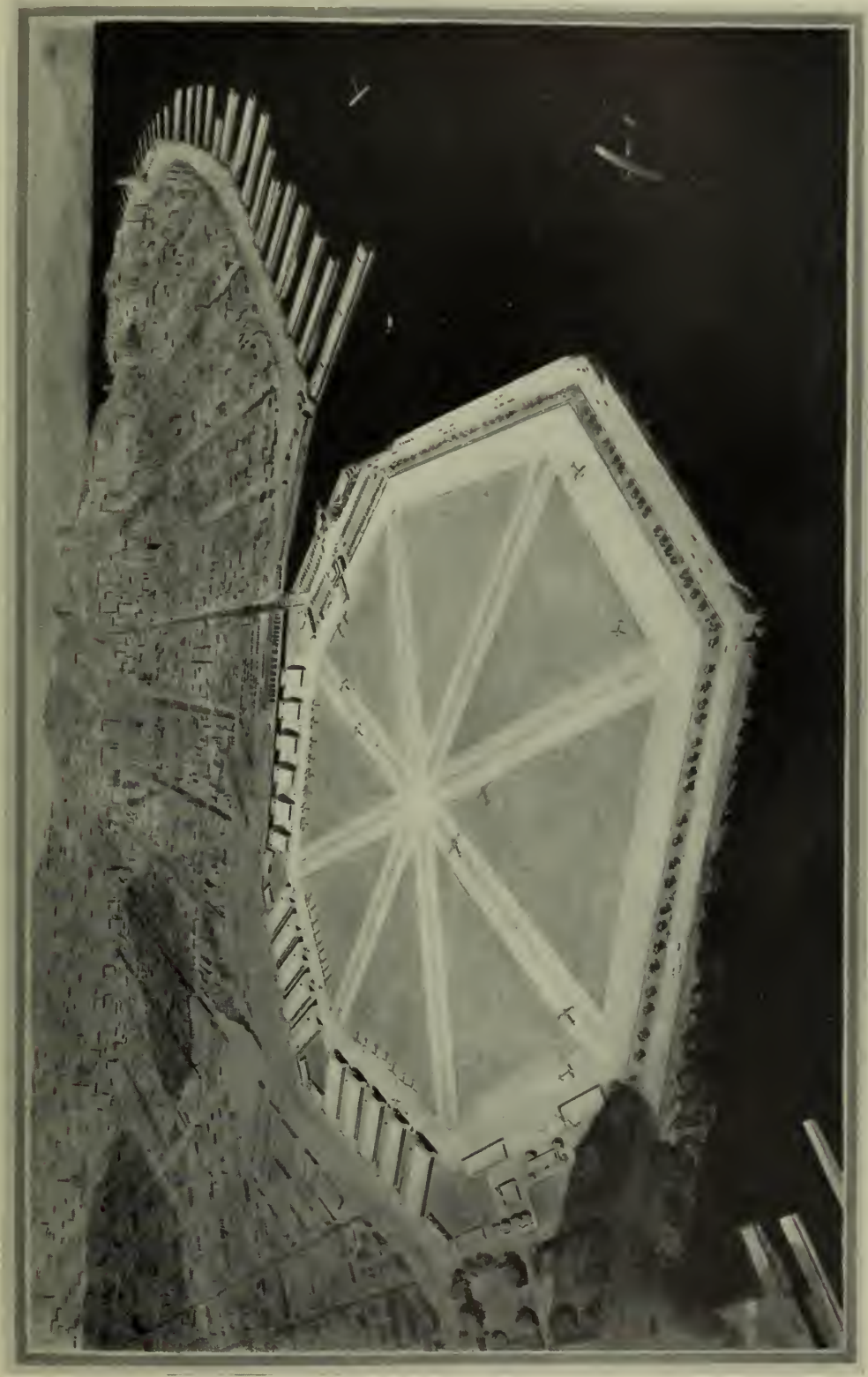
It is inevitable that airplanes will soon replace some of the present carriers in short-distance transportation, and commercial aviation may count on the immediate patronage of at least ten percent of our daily visitors as soon as landing facilities are provided. The new Air Ferries, Ltd., which has been in operation several months between San Francisco and Oakland, has carried as many as 958 passengers a day. With five thousand people arriving and departing each day by aircraft, which is ten percent of the daily commuters to San Francisco, some suitable site ought to be provided in the city. Amphibians can operate at present from the piers (because of their central location), but the rough water in the upper Bay and the heavy boat traffic afford unsatisfactory conditions. At China Basin all these difficulties are removed, there is little boat traffic, and the air and fog conditions are at least as favorable as at any other point in the county. The airport designed and here illustrated for China Basin will have a passenger capacity sufficiently large to satisfy the future needs of San Francisco; it will enable 8000 persons to arrive per hour in planes of the present usual dimensions, and this figure can be increased as much as desired by adding more landing pavements and docks, and by using aircraft of greater load-carrying capacity.

The land required for this scheme is a 200 acre tract just south of China Basin and the estuary, while 120 acres of land will have to be made in the Bay. The land extending into the Bay will include Mission Rock, and will be entirely within the pierhead line: but as it involves a change in the present bulkhead agreement, a special permit will have to be granted by Federal authorities. The scheme will not interfere with any of the Southern Pacific lines, though a removal of some of their shunting tracks, either west or south of their present location, will be sought. The removal of the Santa Fe dockyard forms the chief remaining obstacle to a scheme which will yield greater dividends in the shape of public convenience and civic development than the land in its present chaotic and unsightly condition can possibly yield. The removal of the railroad immediately adjoining the Southern Pacific main terminal should benefit the Southern Pacific passenger travel in like proportion to the economic benefit it would be to the City itself. Other pieces of land can readily be found that will provide the railroads with all that they require in the way of yards and freight terminals. The small piece now occupied by them at China Basin is essential to the great future development of the City's air traffic, and the site certainly should be reserved for this purpose and improved step by step as the growing business justifies the expense.

The proposed airport would give the public better transportation than they now receive from other carriers, and would open the way to a real progress in aviation now retarded because of inadequate terminal facilities. The cost of converting the China Basin site into a complete airport

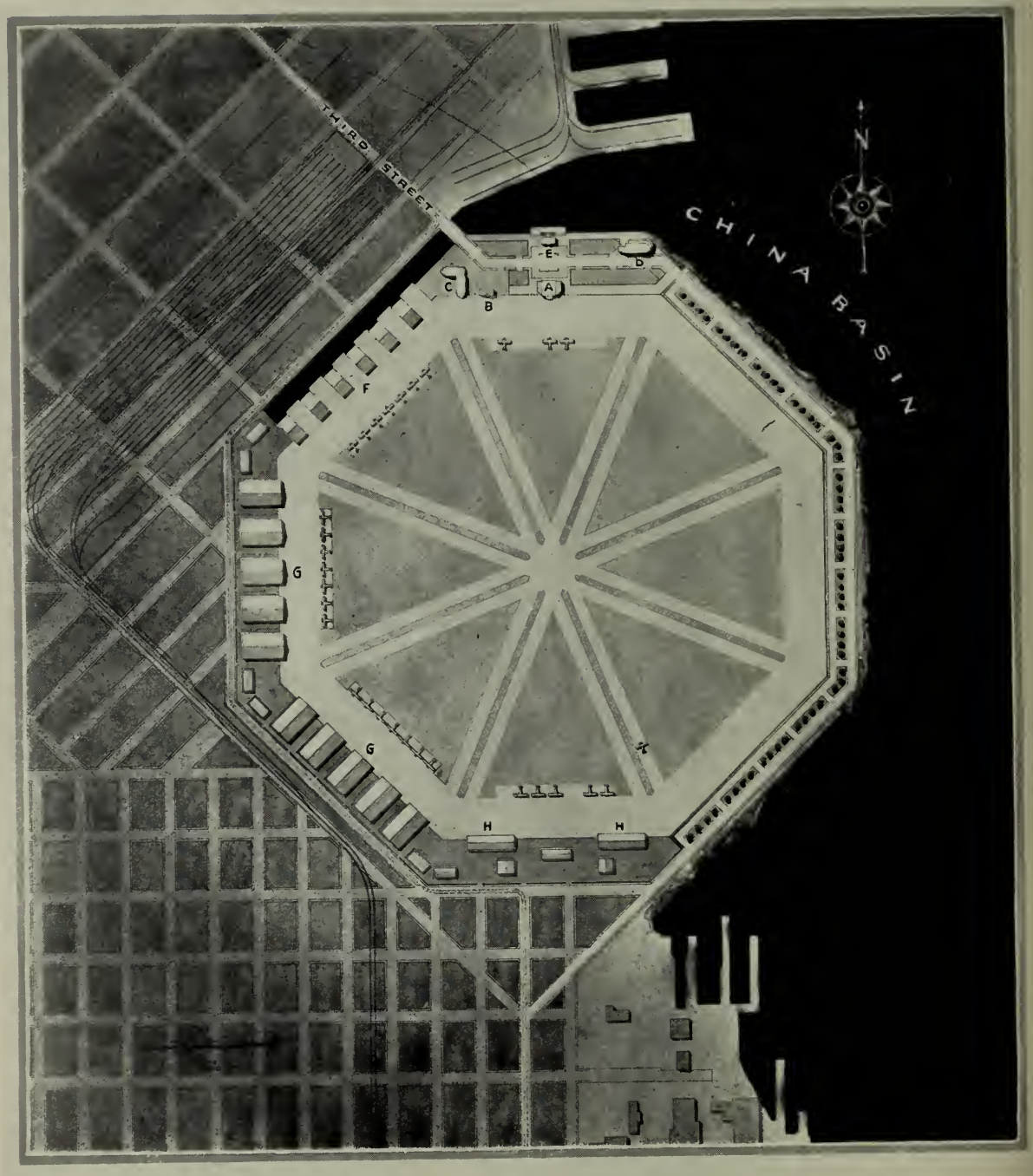


AIRPLANE VIEW, SHOWING CHINA BASIN AND SITE FOR PROPOSED SAN FRANCISCO AIRPORT



PERSPECTIVE OF PROPOSED AIRPORT FOR SAN FRANCISCO

C. H. BALDWIN AND M. CHAPPEY

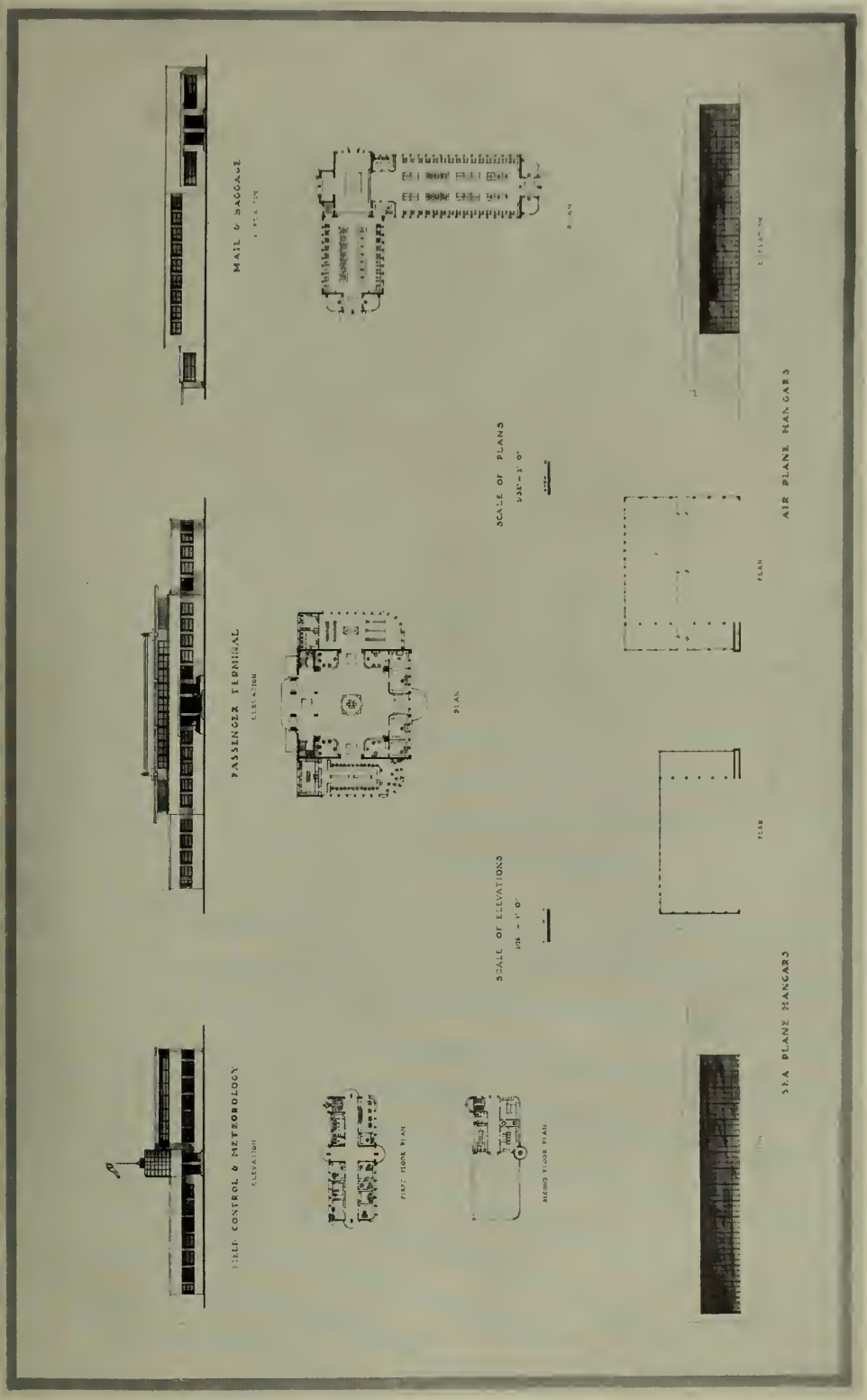


DESIGN FOR PROPOSED AIRPORT FOR SAN FRANCISCO

PLAN

DRAWING BY CHARLES HOBART BALDWIN

A—AIRPLANE TERMINAL. B—FIELD CONTROL, RADIO, METEOROLOGY. C—MAIL AND FREIGHT. D—RESTAURANT AND HOTEL CONCESSION. E—SEAPLANE TERMINAL. F—SEAPLANE HANGARS. G—AIRPLANE HANGARS. H—APPROVED REPAIR STATION.



DETAILS, DESIGN FOR PROPOSED AIRPORT FOR SAN FRANCISCO

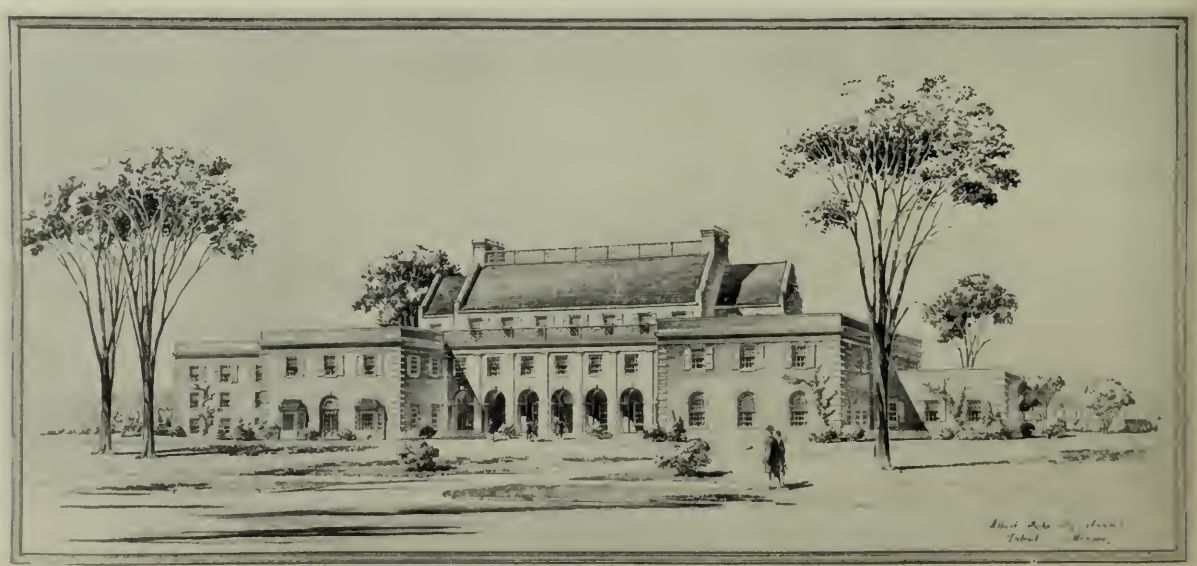
Courtesy Pacific Builder and Engineer

ADMINISTRATION BUILDING, PORTLAND AIRPORT, PORTLAND, OREGON
DeYoung and Roald, Architects

would undoubtedly be considerable, but this expense may be made to cover a period of years by partially developing its site now and adding to it from time to time as traffic conditions demand.

The writer submits that no probable cost is too much to pay for an air terminal if it is five to ten miles nearer the city than any other terminal, and if it affords service to from five to fifty thousand travellers each day. On the basis of ten percent of our commuters using this airport—that is on the basis of five thousand daily visitors coming and leaving by air each day, the entire airport will pay for itself from passenger service alone in eight years, and other returns from freight and express service will, of course, be inevitable.

With a probability that aviation will presently enable the public to move from place to place in less than half the time that is now required, is it not reasonable to put aside for this purpose, the best piece of ground? We submit that China Basin is the best site for an airport, since it is the sheltered part of the San Francisco waterfront; also that it is not merely the best situation but, barring elevated structures, the only possible situation, since Islais Creek, South Basin, Hunter's Point and other sites inside the county must be discarded not only because of down draughts and obstructions, but chiefly because they are too remote and too inaccessible to give to the public what it needs,—an adequate, serviceable airport close to the center of population.



COLONIAL HOTEL, FORD AIRPORT, DEARBORN, MICHIGAN
Albert Kahn, Architect

Photo by Clyde Sunderland Studios

ADMINISTRATION BUILDINGS, OAKLAND AIRPORT, OAKLAND, CALIFORNIA

THE OAKLAND MUNICIPAL AIRPORT

by FRED'K W. JONES

WHILE devoid of notable architectural features, the Oakland Airport has won international recognition for its superb landing facilities, Colonel Lindbergh himself having pronounced it one of the best fields he has been privileged to fly over. The airport is located six miles south of the central business district of the City of Oakland and 11 miles east of San Francisco.

As the terminal airport for the Bay area, this field has been the focal point of Federal aviation endeavor in this district. The Government radio range beacon is located here and a short distance from the field, where its towers will not interfere with flying activities, is the airways radio station of the U. S. Department of Commerce.

The central control station of the Pacific Coast airways weather reporting chain, established by the Guggenheim Foundation and the U. S. Weather Bureau, is situated in the Administration Building at the Oakland Airport. Complete weather information for the coastal and transcontinental airways is available to fliers at all hours of the day and night at this station and reports from the Oakland bureau are broadcast every quarter-hour for pilots of radio-equipped airplanes.

Headquarters of the Department of Commerce Aeronautics Branch supervising inspector for Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming and Northern and Central California are located at Oakland Airport, as is the western terminus of the transcontinental air mail route and the central division point of the coastal air mail route. Air mail for the entire San Francisco Bay district is received at and dispatched from Oakland Airport. The airport also has its own Postoffice branch.

The United States Navy Reserve Aviation Base at Oakland Airport occupies a large part of hangar No. 3. This base is headquarters for Reserve Training Squadron Fourteen which trains selected university graduates each year for Naval Reserve

commissions. The squadron has been highly commended for its efficiency by the Assistant Secretary of the Navy for Aeronautics and the Chief of the Bureau of Aeronautics.

Oakland Municipal Airport comprises 845 acres, located on a broad peninsula which is bounded on the south by San Francisco Bay and on the north by San Leandro Bay. Approximately 260 acres of this area have been developed for the use of transport operators, taxiplane companies and flying schools. On the north side of the field, between the deep water channel and the Southern Pacific railroad, 135 acres are reserved for industrial development. The remaining 450 acres are rapidly being brought to grade.

The airport major operations area is 5000 feet in length and varies in width from 1800 feet at its east boundary to 3000 feet at its west boundary. In addition to this overall landing and take off area, there is a 7020 - foot runway along the southern boundary of the airport, which was used by Lieutenants Maitland and Hegenberger on the Army's pioneer flight to Hawaii and by all of the later transpacific fliers.

Copyright, Clyde Sunderland Studios, Oakland

LAYOUT OF OAKLAND AIRPORT, OAKLAND, CALIFORNIA

There are five steel and concrete hangars at the airport, having a total floor space of 161,000 square feet. Concrete aprons are located at each end of the hangars and rocked taxi-ways extend to the operations area. Hangars Nos. 1 and 2 have lengths of 200 feet and widths of 90 feet and overhead clearance of 22 feet; Hangar No. 3 is 200 feet long, 120 feet wide, with 24-foot clearance; Hangars Nos. 4 and 5 are 300 feet long, 122 feet wide, with 24-foot clear-

ance. Ample shop and office space is provided in Hangars Nos. 1, 2, 3 and 4 by lean-tos.

In providing shop and office space for Hangar No. 5 a different type of construction was used. The hangar proper was constructed similar to the others, but alongside it was built a two-story frame and stucco

ers' and night operators' quarters; the general shops, lobby and ticket office; and the executive offices of Boeing Air Transport and Pacific Air Transport. Upstairs there are 11 rooms, included in which are the woodworking and radio shops and the quarters of the Boeing School of Aeronautics.

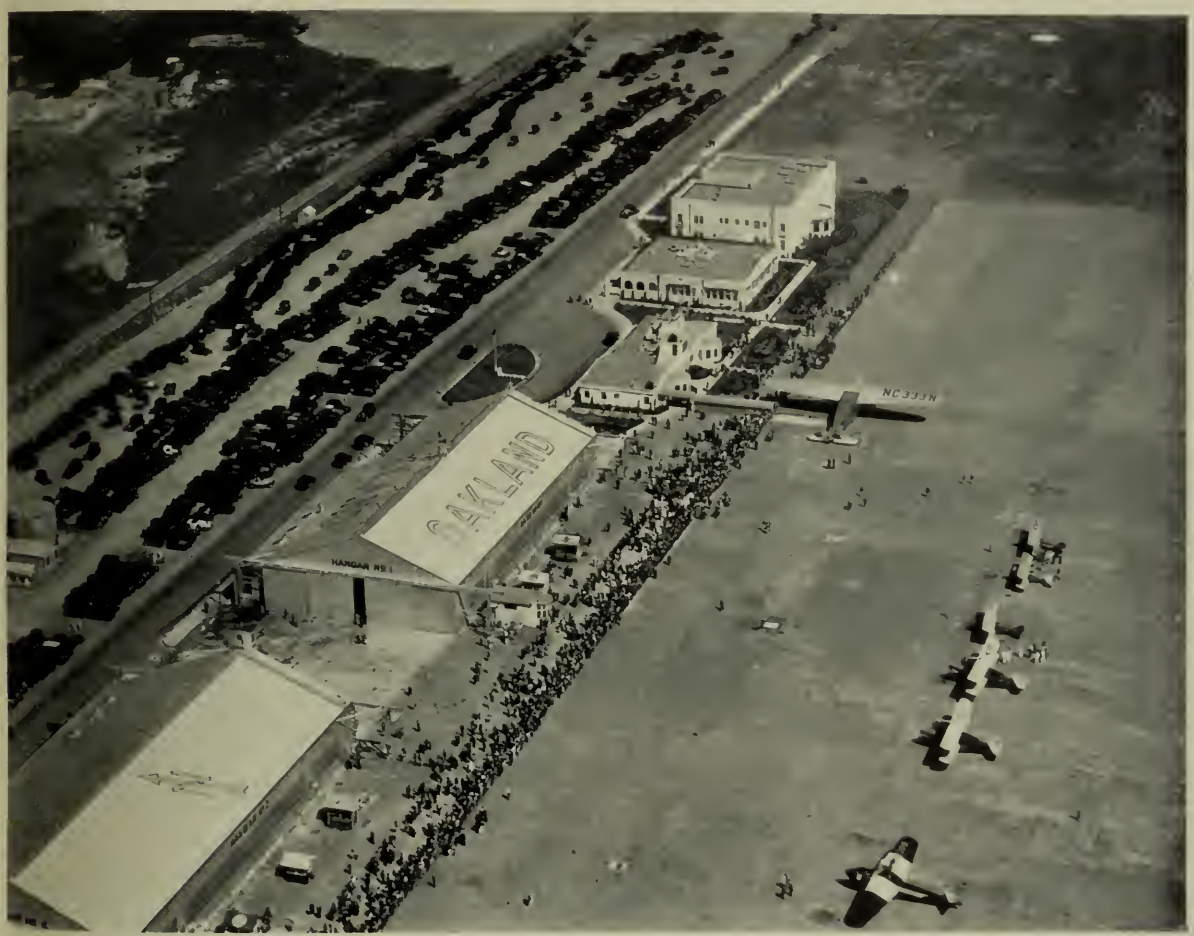


Photo by Clyde Sunderland Studios

AIRPLANE VIEW OF OAKLAND AIRPORT, OAKLAND, CALIFORNIA

structure, which is 30 feet wide and 300 feet long. On the field side of the hangar is an observation room for passengers and a mail and express room.

Hangar No. 5 is generally regarded as one of the nation's finest examples of a combination hangar and administration building. It houses the planes and offices of the Boeing System. There are 17 rooms on the first floor, including the field service and electrical department; the pilots', dispatch-

The first floor of the structure on the field side of the hangar houses the air mail and express service, and on the upper floor is the passenger waiting room, from which a full view of the flying field is enjoyed.

The Airport administration building is located just east of Hangar No. 1. This is a single story frame structure, with a frontage of 122 feet and a depth of 42 feet, surmounted by two towers which are used for checking the movement of aircraft and for

observing upper air wind conditions. In this building are the offices of the airport superintendent, flight surgeon, Department of Commerce supervising inspector, the U. S. Weather Bureau, and the U. S. Postoffice.

Adjacent to the administration building are the airport restaurant and inn. The inn was the first hotel to be built at any United States airport and the restaurant was the first airport establishment of its kind to be operated on such a large scale.

There are outside rooms with bath accommodations in the airport inn, and on the ground floor a spacious and tastily decorated lobby affords guests a comprehensive view of the flying field activities. Just off the lobby there is a barber shop catering to pilots and traveling public alike.

In the airport restaurant, which is connected with the inn by a covered passageway, 185 patrons can be accommodated at one time. The main dining room fronts onto the flying field, giving diners at window tables full view of the airport operations area. Private banquet room and coffee shop service also is furnished by the restaurant management.

In equipping the airport, special care was taken to provide for the safety and comfort of visitors. Parking space for approximately 3000 automobiles is available adjacent to the line of hangars and a system of fenced walkways and observation areas affords ample room for thousands of persons to witness the flying field activities in safety.

As a further aid to safe operation of aircraft, all oil trucks are banned from the field and the six major operators who vend gasoline and lubricants at the airport dispense their products from underground pits in the operations area. A chemical truck, hydrants and hose reels in all structures, advantageously placed hand extinguishers, and an efficient alarm box system, provide fire protection at the airport.

The terminal is completely lighted for night flying operations. In addition to the standard boundary and approach lights, the equipment includes an 8,000,000 candle power rotating beacon, 30,000,000 candle power airport landing light, and six 1500-watt and three 3000-watt auxiliary field floodlights. Buildings are marked with red obstruction lights and are also floodlighted. In the northeast corner of the operations area, a monoplane wind vane, Neon-lighted at night, indicates the proper landing direction to pilots.

Twelve public telephones are located at convenient points about the airport and two telegraph companies maintain space in the administration building for the reception and dispatch of messages.

There are nine flying schools at the Oakland Airport which are giving instruction to 356 students. Courses are given for private, limited commercial, and transport pilots.

From October, 1927, when Oakland Airport was opened to commercial fliers, to March, 1930, inclusive, 174,488 airplane landings have been made at the field, 104,773 passengers have been carried and 21,730 students have made flights.

During the year 1929, Oakland Airport traffic showed the following totals: airplane landings, 82,316; passengers carried, 52,900; student flights, 13,009.

The above airplane landing figure, when doubled to include departures of the ships, gives this statistical sketch of local air traffic for 1929: Throughout each 24-hour period of the entire year, an airplane was either taking off or landing at the Oakland Municipal Airport every three and one-third minutes.

AIRPORT AND AIRWAY ILLUMINATION

by D. J. PRUDHOMME

Beacon and On-course Lights Mounted on Steel Tower

THE aviation industry is moving ahead rapidly. About eighteen months ago thirty-five companies were operating fifty-nine different scheduled airlines over the airways, and were flying a total of 69,000 miles every twenty-four hours, in the United States and into Canada, Mexico and Central America.

At the present time there are forty-five such companies variously engaged in the transportation of mail, passengers and express, flying approximately 12,000 miles per day in the United States, Canada, Mexico, West Indies, Central and South America. These forty-five carriers operate 137 mail, passenger and express routes, both domestic and foreign. Within the next four years there will undoubtedly be a decided increase in these operations and service, all of which will demand increased airway and airport facilities. Even the most optimistic are hesitant to predict what will be spent on engineering developments or what requirements will have to be met within the next year or two.

Suffice to say that the airport has outgrown the status of a "wind-sock" in a pasture field, and is gradually assuming the dignity of an indispensable terminal in a growing, expanding transportation system. Already expenditures for airport development aggregate well on to a half billion dollars, and another half billion expenditure is involved in plans underway. This huge outlay is made up of sums ranging from a few thousand dollars in smaller localities up to one, two and as high as seven million dollars for complete airport terminal development in the more important centers.

The expediency of aviation in meeting public needs depends upon night flying as a matter of course. Lighting therefore becomes a prime importance to the success of the industry. The present practice of airport lighting has grown out of the necessity of providing some sort of illumination largely for the service of the air mail. The municipalities have been so suddenly projected in the business of airport administration with the inevitable requirement of bond issues for the land, grading, sewers, buildings, etc., that the element of cost has been a considerable factor in limiting desirable lighting practice. The result has been to provide the barest necessities as far as lighting is concerned and these apparently have been adequate for the relative few plane movements we have to-day, coupled with the fact that most of the pilots doing night flying are experienced and extremely resourceful.

Rotating Beacon

It is significant that lighting is one of the three major features on which an airport obtains a rating from the United States Department of Commerce. The standards set up in airport rating regulations are in the nature of minimum requirements and as such they are more probably worked

NIGHT VIEW OF BOLLING FIELD, WASHINGTON, D. C.
Lighted with General Electric, Type ALH 24 Kw. Floodlight

NIGHT VIEW OF SACRAMENTO, CALIFORNIA, AIRPORT
Lighted with General Electric Airport Twin Floodlight

Series-type Boundary-light, Mounted on Cone

from, rather than to.

Those planning airport lighting facilities should anticipate their requirements not in terms of minimum values but in terms of safety, general utility and expediency of traffic operation, such as any large, active industrial or commercial enterprise might best comprehend. The cost of investment in lighting is small compared to its service in extending the use of the airport throughout twenty-four hours a day. The advertising value of light should not be overlooked. To inspire confidence and build up patronage for air travel no factor is more important than adequate airport lighting.

It might be interesting to consider briefly how light affects aerial transportation, considering speed, safety, reliablity, comfort and cost, and at the same time point out requirements of airway and airport lighting.

Speed in transportation means getting quickly from one point to another, not the rate at which the vehicle travels. If travel must stop with the approaching darkness all the advantages of a high rate of speed would be lost, and only by means of light can airport air transportation be continued through the night.

Reliability means maintaining a maximum schedule of performance day and night, winter and summer. Only with lighting can this maximum be obtained.

Comfort means many things but principally with this new mode of transportation "peace of mind". What can better produce the mental state than the visual assurance that the pilot is following the correct course, and will land at a well-marked airport? This is even more accentuated after nightfall when the ground and surroundings present a blank uncharted space.

The cost of lighting is so small, in fact less than 5% of the total airport cost, that it adds almost nothing to the total expense of air travel.

Safety after dark means the use of beacons, obstruction lights, boundary lights and field floodlights to mark the pilot's course and enable him to take off and land safely. Correct lighting insures safety on both airways and airports.

First let us consider whether transportation is really making any progress toward safety. Insurance companies will not allow themselves to be influenced by sentiment or hoped for prospects, but base all their rates on facts and statistics. The most specific proof that air transportation is becoming safe is the fact that insurance rates for passengers, planes, and pilots on regular transportation lines are being continually reduced. This increase in safety is due of course partly to the improvement in the aeroplane itself, but we must not overlook the fact that the future of flying depends to a very large extent on the progress that is made in airport development. We must realize that even natural flyers must land. We talk of birds being at home in the air; this is not so, as birds are only at home on the ground or on something attached to the ground, and when they are in the air they are in flight.

This is also true with the aeroplanes. No matter how well the plane may be designed from an aero-dynamic point of view, how well equipped with instruments to allow the pilot to fly in bad weather or at night, how well trained or even how experienced the pilot may be, he must take off and land on the ground (or sometimes on the water.)

Airport Twin Floodlight

This means that our airport must be completely equipped for use not only during the daytime but also at night.

A pilot should be able to land on an airport at any time day or night, heading directly into the wind and should not have to "quarter" or land down wind on account of unsafe conditions surrounding the field. In order to do this with safety, the field must not only be lighted but must be adequately lighted. An airport without provision for night service is not rendering full value.

Possibly one of the best ways to visualize these various lighting devices which have been developed for our safety would be to take an imaginary flight in the afternoon and have dark overtake us before we reach our destination.

We fly along and night overtakes us. The landscape, towns and familiar markings fade out of our vision. How are we to keep on our course? We see a flash of light on the horizon and we fly toward it. It is a rotating beacon that flashes to us six times a minute, one of the safety devices located every ten miles along the airways by the Department of Commerce. As we approach nearer we see the red "on-course" light on the beacon tower, flashing in the direction of the airport. This is flashing "8", the numeral which indicates the number of these beacons between us and the air terminal at the end of the air route. We know exactly where we are—eighty miles from the air terminal in the direction of the red "on-course" light. One more beacon with the red "on-course" light and we see a beacon with green "on-course" light. This indicates that we are now at an emergency intermediate landing field. The small white lights close down to the ground mark the boundary of the landing area, and are therefore known as boundary lights.

We continue our course and as the captain finds his location by lighthouses and his channel by range lights, so we are locating our airport by beacons and "on-course" lights which guide us to our field. As long as we are flying, the direction of the wind does not make a great deal of difference, but as we approach our destination and think of landing we must know the direction of the wind. We must land safely into the wind. The question is how are we to determine this? We see the illuminated wind cone which shows us direction of the wind. Knowing the direction of the wind we now know the direction in which we must land. The next question, is where are the limits of the landing field? This is immediately answered by the white frosted globes that glow all around the limits of the field. These lights are known as the boundary lights. We, therefore, know the area within which we must land.

We also notice along with the boundary lights at one point and directly opposite it across the field some similar lights, except they are green. These green lights denote the best line of approach from the standpoint of landing on this particular field. If possible, therefore, we take the direction in the straight line between these green lights which lead us into the wind.

There are certain buildings, trees and poles which surround the field, and we see dotted around at various places, red lights. These are the obstruction lights that show the obstructions which we should avoid. As the drone of our motor is noted by the attendant, he turns on the floodlight and the whole field is instantly illuminated with light that stands out in bold relief from the surrounding territory.

We who have been used to staying close to the ground, traveling in a horizontal plane are unable to determine the distance we are above the ground. Immediately we notice the floodlighted hangar. We are familiar with buildings, and can therefore judge our height in comparison with the lighted buildings, determine how high we are above the landing field, and circle down accordingly.

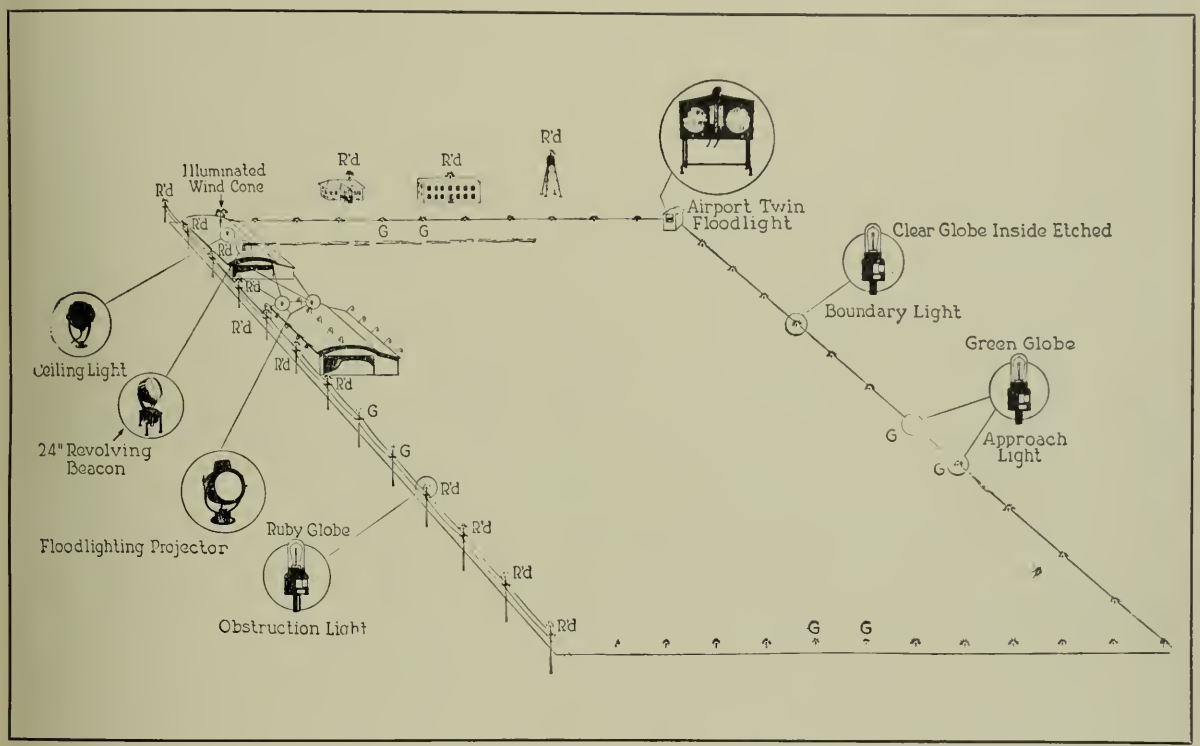
As we glide safely to rest, we feel that we must have had Aladdin's lamp. Light has guided us unerringly through the night, shown us where to land, how to land, how high we were, the obstructions, and last but not least, flooded with light the whole landing area.

Naturally our curiosity is aroused to know just how these things are accomplished. Again we turn to the genie of modern times, "electricity." We stand in a glass enclosed room and instead of rubbing our lamp, we

simply push a little white button. Out rushes a stream of light from the beacon, which circles the horizon at a rate of 6 rpm, the only thing visible on the land or in the air.

Again we push a button, white and green lights rise up out of the ground and show us the limits of the field.

Another slight movement of one finger the exact direction in which the wind is blowing, no matter whether we are on the ground or in the air. Last but not least, we ask our genie for a slice of daylight to be placed on the field. It is as simple to him as anything else. The movement of the finger upon one of the white buttons floods the field with light and the whole job is accomplished without physical effort.



LIGHTING FACILITIES AT TYPICAL AIRPORT

and every building, pole and danger point gives out a warning signal of red.

We can hear the wind blowing outside. We wonder just how fast it is blowing. We glance at the instrument in front of us which says "miles per hour", and again we have to bow to the genie, for here by the use of electricity and a small Selsyn motor, a dial is made to show the wind velocity by simply transforming the speed on the anemometer cups on to the direct reading dial in front of us. We know now that the wind is blowing and its velocity, but more important yet to the pilot is the direction of this wind. Pressing a little button floods the wind cone with light, and we know

While we stand in the control room, the telephone rings and some aviator from another airport wishes to know the "height of the ceiling" at our port, i.e., the approximate height of the clouds or fog above the ground. We turn on the ceiling light that is pointed upward at a certain angle, and located at a certain distance from the control room. By sighting a pointer at the spot of light on the cloud, the height of the ceiling is read directly from the scale. This information is given to the aviator who is waiting, so that he can make a safe landing when he arrives at this field.

These are the modern genie's contributions to safe night flying.

CARVED OAK PANEL BY RUDOLPH T. SCHWARTZ

SPAIN

A Portfolio of Camera Sketches

by Lothar C. Maurer

IV. *Chimneys*

FIGUERAS

GRANADA

RONDA

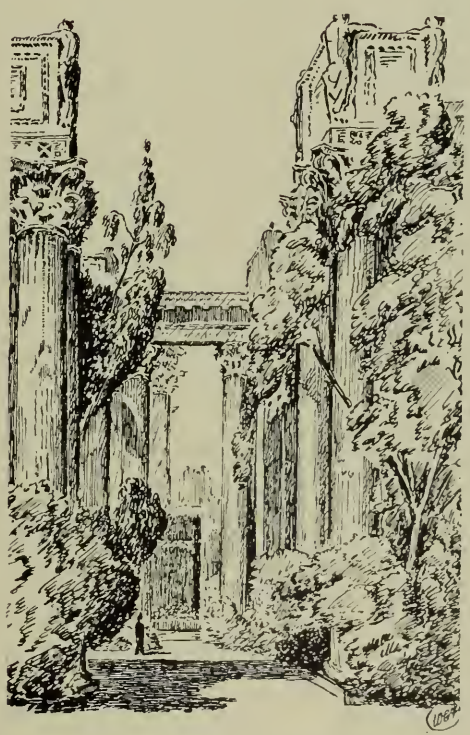
ALGECIRAS

PEN SKETCHES

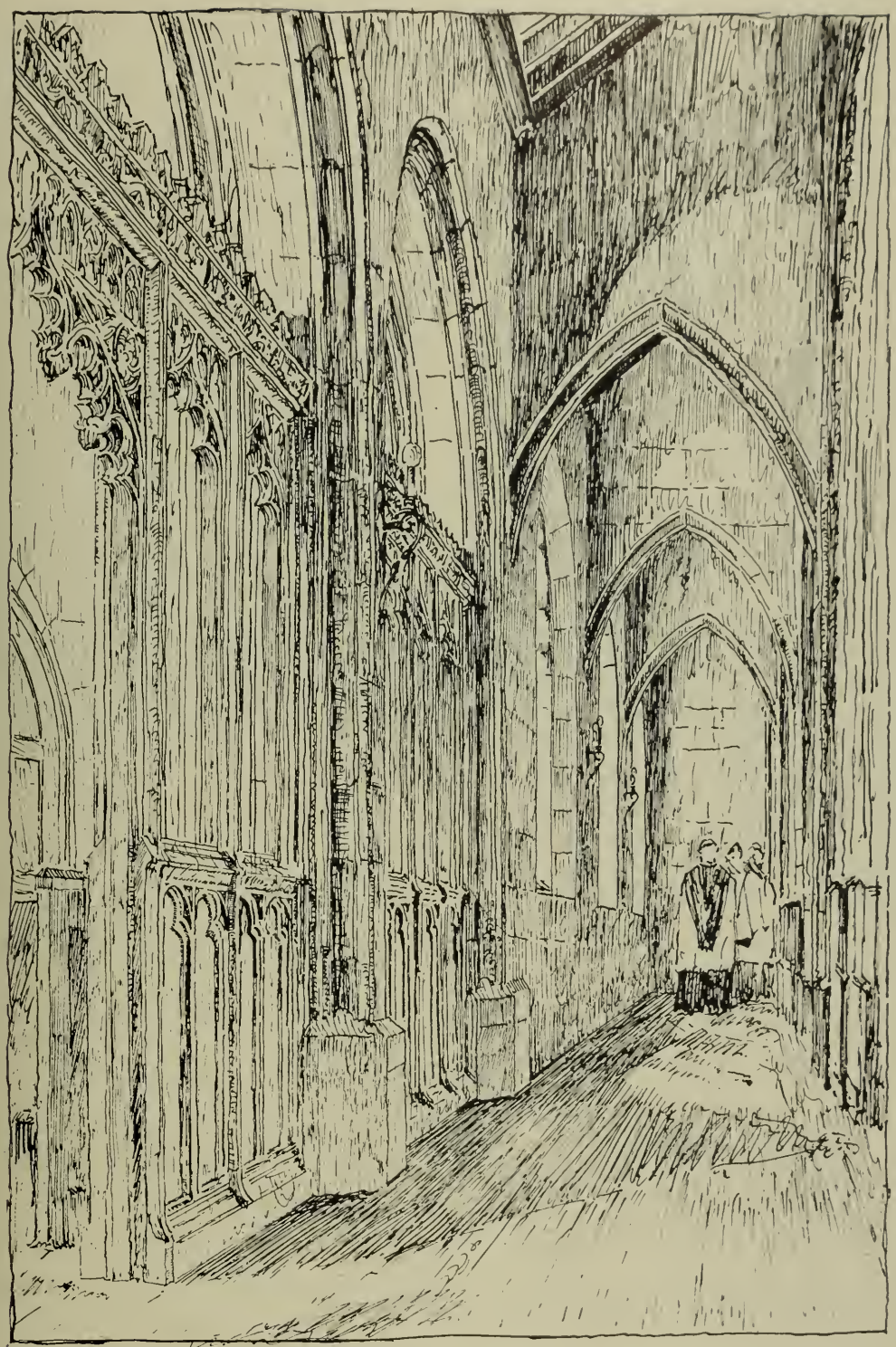
by

W · C · F · GILLAM

Architect

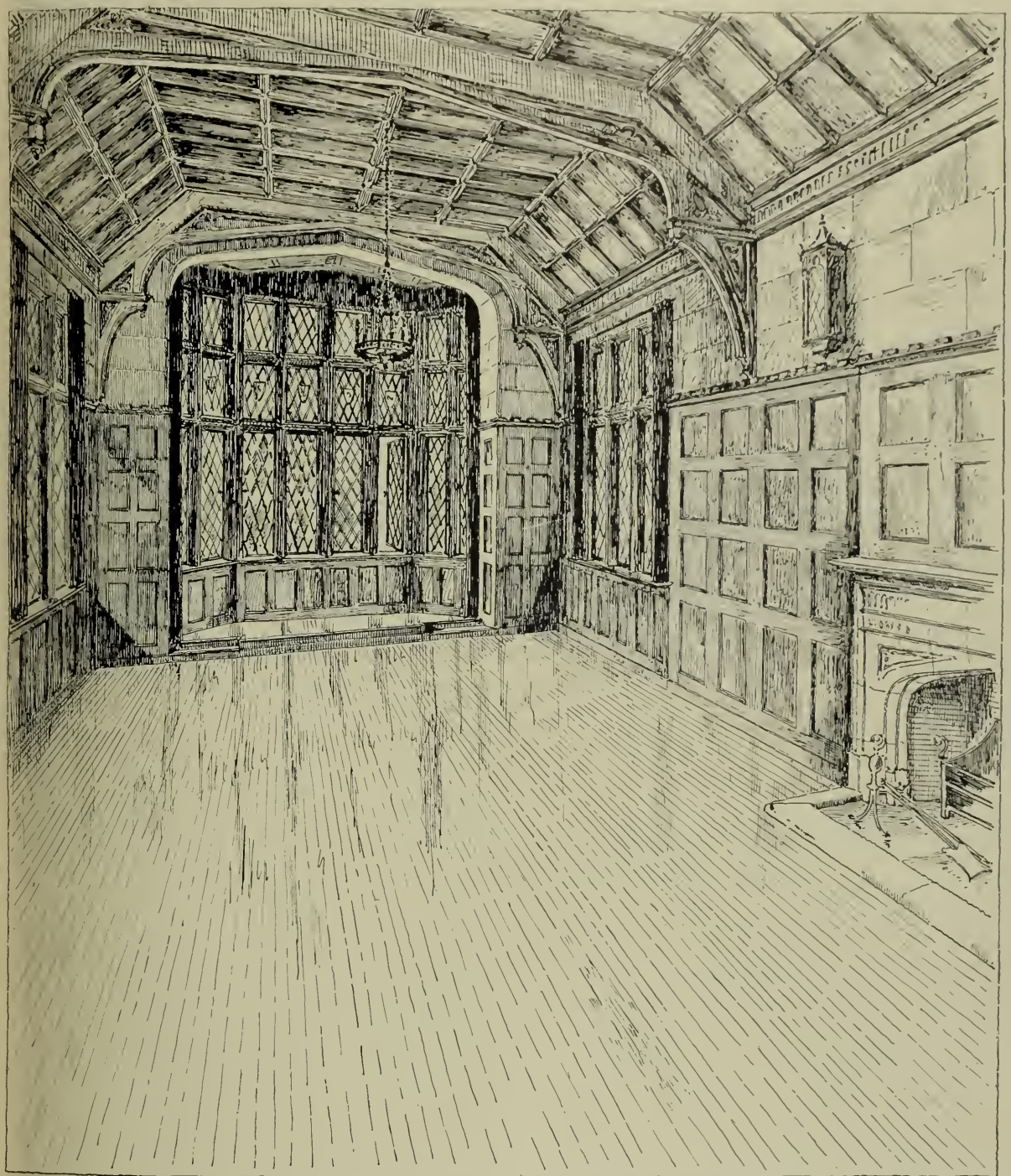


PALACE OF FINE ARTS, SAN FRANCISCO



ST. PAUL'S EPISCOPAL CHURCH, BURLINGAME, CALIFORNIA

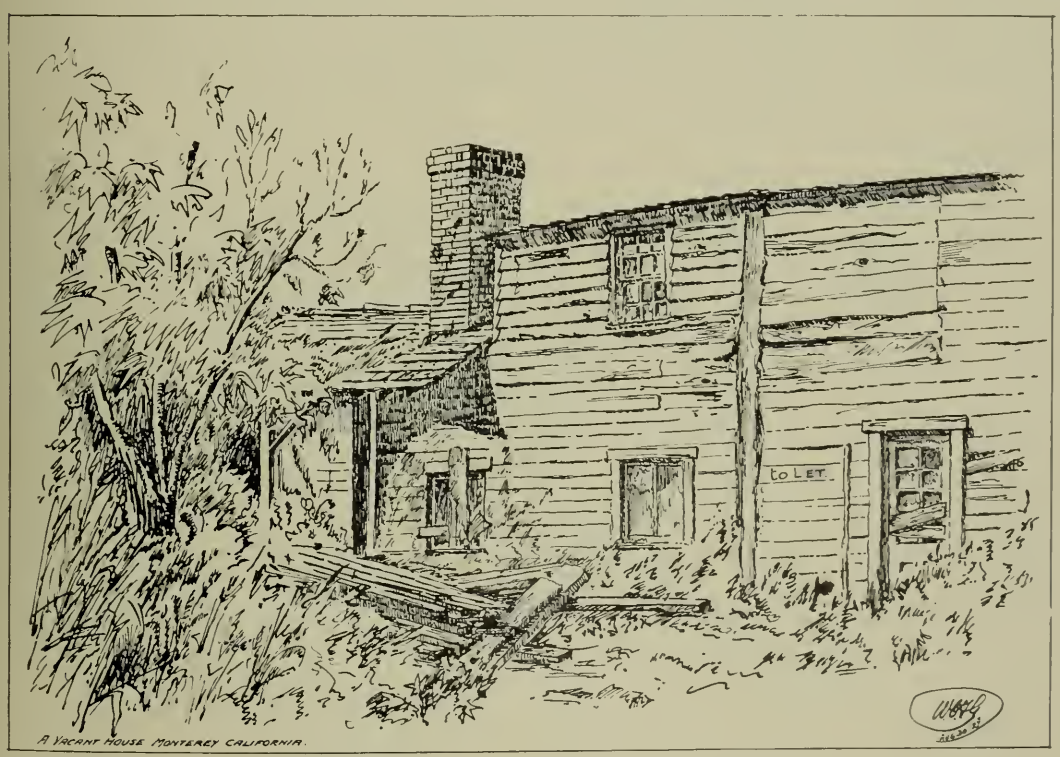
W. C. F. GILLAM, ARCHITECT



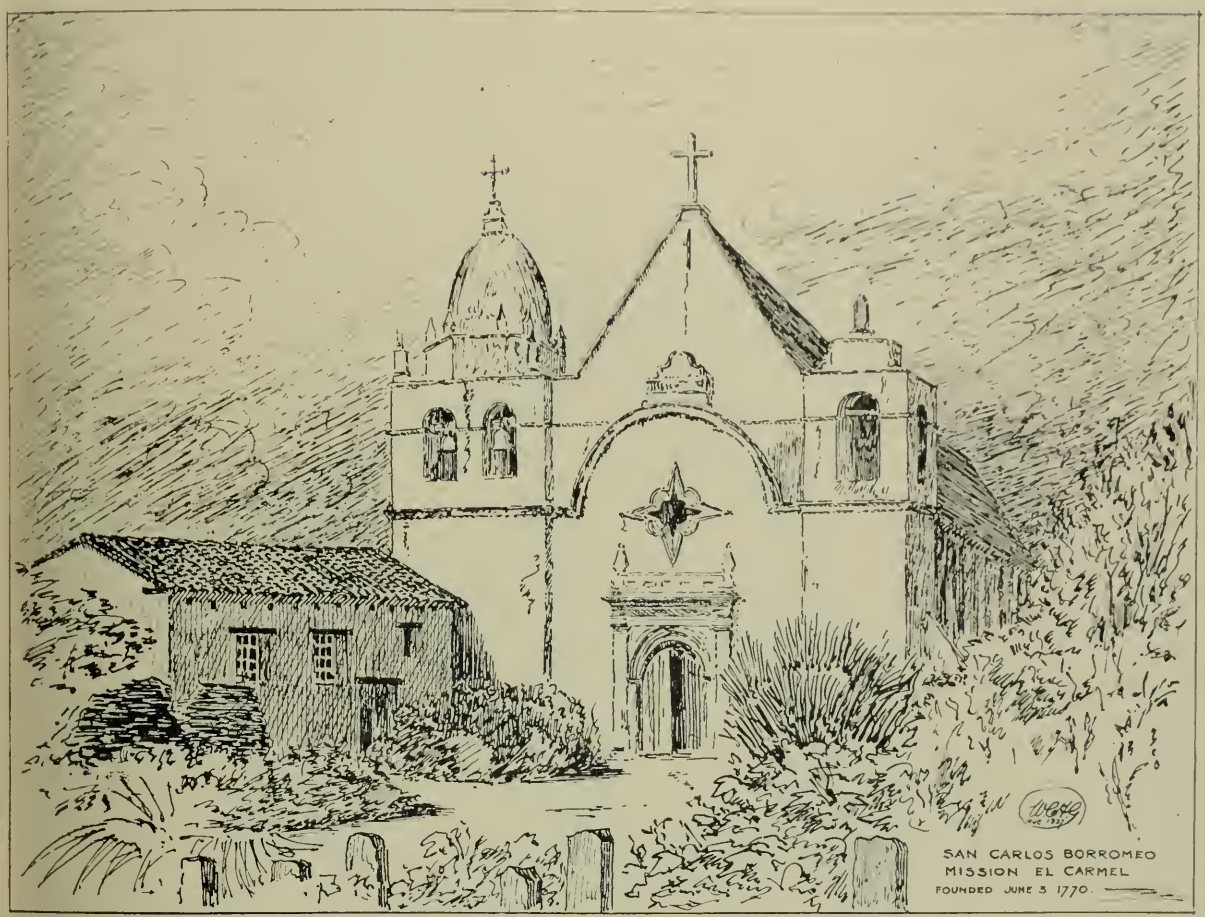
GUILD ROOM, ST. PAUL'S EPISCOPAL PARISH, BURLINGAME, CALIFORNIA

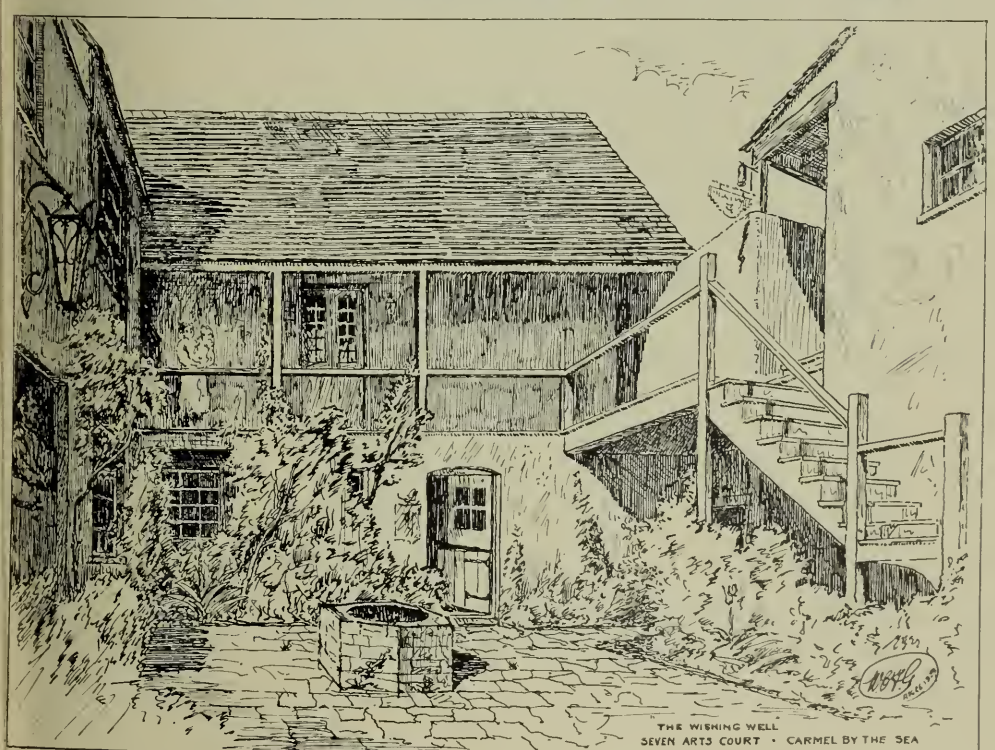
W. C. F. GILLAM, ARCHITECT

ENTRANCE TO THE GOLDEN BOUGH, CARMEL, CALIFORNIA



A VACANT HOUSE IN MONTEREY, CALIFORNIA
Etchings by W. C. F. Gillam





SAN CARLOS MISSION AND THE WISHING WELL, CARMEL

Cottage Japanese Tea Gardens
Golden Gate Park
San Francisco.

A CITY GARDEN

by FREDERICK JENNINGS

THE old saying that "nice things come in small packages" sometimes holds true even in landscape work, notwithstanding the fact that one has the feeling of "wide open spaces" and "nature's great expanse" when mulling over a landscape plan. The possibility of a cramped city lot ever becoming a charming bit of natural paradise seldom occurs to anyone. A patch of grass with a polka dot flower bed pinned in the center seems to be the usual conception of a city garden. But in this little garden located at 2610 Jackson Street, San Francisco, and designed by Horace George Cotton, landscape architect, we find tucked away on a thirty-four foot lot, a charm seldom observed even in the open country.

The feeling of tended vistas is evident and is due not only to the design of the garden but also to the view of a city park, across the street on the south, carrying the eye over a hilltop to rolling clouds and blue sky beyond; and to the view of the Bay, the Marin shores and the endless horizon stretching far to the north.

There is an interest in diversity of color and form seldom found in small gardens; a public exposition of charm near the street, a central bit of semi-public garden with a pool and, lastly, a wee garden terrace hidden away from public gaze in the rear where the heart of this beautiful scheme has been developed to the highest degree. Here the sun pours down eight hours a day and winds seldom raise their voice above a whisper. Call it good fortune if you will because there was a certain amount of good fortune inherent in the location of the different features in the surrounding landscape, although there were other less fortunate features which required careful study as well.

NICHE IN PAVING BLOCK WALL AND WALL FOUNTAIN

Good fortune also presented itself in the person of a charming client who appreciates and loves gardens and who co-operated in every way possible by obtaining those elements which would make the gar-

SAN FRANCISCO HOME AND THIRTY-FOUR FOOT LOT ADJOINING WHICH WAS DEVELOPED INTO A CITY GARDEN. A THREE STORY RESIDENCE ON THIS LOT WAS RAZED TO PROVIDE ROOM FOR THE GARDEN

THE SUMMER HOUSE WITH ITS ADZED TIMBERS AND RUSTIC SLATE ROOF

den more pleasing. Wrecking a well-built house on an expensive piece of property just to increase the size of a garden is evidence that, in the owner's mind, there are other things of greater importance than financial consideration. Thus the natural, physical, and human elements played into each others hands in offering this opportunity for a picture garden. The term "picture garden" is used for the reason that there seem to be more pretty pictures for a small area than any other garden I have yet had the opportunity of examining.

The secret of its design is its simplicity, with an open center and the elements of interest placed around the outside. The most serious problem in the planning of this work was to eliminate as much as possible a three story, solid brick wall adjoining the property on the east. This overpowering intrusion ran for some eighty feet along this side and at first seemed an impossible obstacle predominating the entire view. It was finally obliterated by building up a five foot bank of earth and rock garden against it with a solid row of Lombardy Poplar trees backed against the wall.

To tie this new lot in with the owner's home next door the old concrete wall next to the street was removed and a low granite one with wrought iron palings, duplicating the one in front of the house, was carried across the front. This effectively keeps trespassers off the property yet allows any who may be interested to look into the front portion of the garden to enjoy its charm and seasonal color.

There is a falling away of about six feet in elevation from front to rear so the area was developed into three different levels. The front level near the street contains a lawn in the center with a surrounding planting of birches, spiraeas, barberries and other flowers and berried trees and shrubs.

The central or semi-public garden, on the next lower level, contains several interesting bits of garden detail. The rock garden on the east side with the Lombardy Poplar background, mentioned above, is one of the few rock gardens that is not "overdone". By this I mean that it was not allowed to become a "rock pile" wherein the effect is not a scrambled accumulation of misfit boulders placed on end, like a second-hand collection of tombstones, but rather, a few well placed rock specimens, warm in color and interesting in outline, giving the feeling of natural outcrops or ledges of native stone.

The arrangement of rocks in a rockery reflects the designers fine appreciation of a natural setting. Rocks can give a stiff, stilted, and most unnatural feeling by being placed on end like so many head-stones. Here the stones have been placed in such a way as to give a feeling of equilibrium as though nature were at rest. Color and life were added by an interesting collection of brightly colored rock plants which lend a varied interest to the garden at all seasons.

To tie in this part of the garden more closely with the house a small flight of seven steps was made which leads to an opening through a hedge on the west. This opening leads to and is centered on the side door of the house. An interesting picture has thus been created when, upon opening the door from the house, the eye carries through the archway in the hedge, down the steps, across a plot of lawn with a pool in the center, and ending in a glimpse of the rock garden with a built-in rustic stone seat. Walks in this area and the curbing for the pool are of Glenn Ellen flagstone, the soft buff tones of which harmonize nicely with the browns and reds of the rockery. The pool is an elongated oval some five by twelve feet in size. At the south end are a pair of frogs busily engaged in squirting streams of water the length of the pool at a bronze garden figure. This figure is a reproduction of a famous masterpiece entitled "The Boy and the Panther."

This central garden is connected with the front garden on the south by a small flight of steps framed by Japanese Weeping Cherries on either side. On the north is a simple yet artistic rough board redwood fence, stained a chalky blue-grey. The stain was wiped off well when applied thus permitting the warmer tone of the redwood to show through. The gate through this fence connecting the central garden with the rear terrace is simple, yet its curved top line

CENTRAL POOL WITH ROCK GARDEN BACKGROUND
Note the Built-in Seat of Rustic Stone

A SIMPLE YET ATTRACTIVE REDWOOD FENCE AND GATE

combines nicely with the wrought iron arch and lamp overhead.

Passing through the gate we find one of the coziest little garden spots imaginable. It is sufficiently sheltered on all sides to protect it from the severe winds common in this part of San Francisco, yet has a spacious feeling by retaining the two views over the garden wall on the east and north. There is more structural work in this part of the garden than the other two levels because of the desire to make it the most livable part; where the owner and her friends may enjoy rest and seclusion.

A really artistic flight of eight steps, half recessed and half projecting into the garden, connects this terrace with the rear of the house. They are constructed of Yosemite slate as are also the terrace flagstones and the roofs of the garden structures. This material seems particularly well adapted to garden use because of its rustic effect, durability, and its great variety of browns, greens, blues and other interesting shades of color.

The garden wall on the north and east is constructed of rough, basalt paving blocks obtained from the city street department. It is surprising what an interesting surface can be obtained by the use of this material if the joints are well raked and an effort made to accentuate the lights and shadows of the rough surfaces.

There are two main features of interest in this terrace in addition to the planting. One of these is the garden house. Its timbers are rough-hewn and connected with pegged joints. The south elevation of the garden house is open and faces the garden, but the other three sides are enclosed, the two ends with rustic paneled glass, and the rear with the paving block wall previously described. The roof is an unusually interesting bit of slate. The irregularity of pattern in the shingles and the warm buff, brown, greenish and slate tones attract but do not demand attention.

The second feature is perhaps the most interesting bit of detail in the garden, the wall fountain. This artistic motif is a symbolized dolphin set in a niche in the garden wall. The niche and wall at this point are surfaced with thin slabs of slate so as to give a more finished background than the more rustic paving block surface. The dolphin, together with a basin into which water flows from the dolphin's lips, are of brownish-gray soapstone matching the color of the other materials; as is also the pool

STEPS LEADING FROM THE HOUSE TO THE REAR GARDEN TERRACE

which catches the water below. A small roof of irregular slate shingles supported by an adzed framework covers the fountain overhead. It gives somewhat the feeling of a small wayside shrine so common along Alpine trails in the Tyrol country.

The planting of the rear terrace is simple. Four large Yews, one in each corner, give point and body to the mass. The four main planting areas in the corners are filled with

rhododendrons and azaleas. Wistaria on the summer house and roses on the fence soften the elevations. A small bed of flowers in the center of the flagging has been filled this season with colorful zinnias.

While words fail dismally to give even a partial picture of this charming garden the photographs used as illustrations may help to convey more fully the rustic beauty and serene charm of this little bit of nature's handiwork.

BETTER HOMES COMPETITION FOR GOLD MEDAL AWARDS

TO aid in eliminating faulty design and inefficient planning, Better Homes in America, of which Dr. Ray Lyman Wilbur, Secretary of the Interior, is president, will each year award three gold medals to the architects who have designed the best small houses erected anywhere in the country during the preceding year.

The medals are the gift of Mrs. William Brown Meloney of New York, who, with the co-operation of President Hoover, founded Better Homes in 1922, and still serves as its vice-president. The awards will be made by a committee of five architects appointed by the president of the American Institute of Architects, Robert D. Kohn of New York.

The awards will unquestionably stimulate greater interest among architects in the practical and urgent problem of improving the architectural design and planning of homes of families of moderate means.

The medals are therefore limited to houses one story, a story and a half, or two stories in height and with a cubage of not more than 24,000 cubic feet above the level of the first floor. This virtually restricts the competition to houses of from four to six rooms, but leaves complete latitude in the design and planning of these houses.

For the 1930 awards, the floor plans, blue prints, elevations, interior details and photographs of houses competing may be submitted for any houses actually completed during the year 1929. These materials must be shipped to the American Institute of Architects, 1741 New York Avenue, Washington, so they will be received not later than December 1, 1930, in order that the awards can be made and announced early in January.

The jury is not required to make any or all of the awards should there be no houses submitted which in its opinion deserve a medal. In addition to the medals, however, the committee may also grant honorable mentions to designs which are deemed worthy.

Prize winning designs will be published and designs winning honorable mentions will, at the discretion of the committee, also be published. Any publication of the designs which are awarded medals or honorable mention will be copyrighted and due prominence will be given to the name and address of the designer, together with the statement that the design is his private property.

"This project," the announcement added, "will be welcomed by the architectural profession because of the opportunity which it offers for co-operation with those civic interests that are working year by year for the improvement of the American home. Increasingly the business and professional groups of America are contributing disinterestedly to the public welfare of their professional experience.

"While rapid strides have been made in monumental architecture, in public buildings, office buildings and expensive private residences, small houses have lagged behind in the quality of their design and construction.

"Much excellent work has been done by the Architects' Small House Service Bureau, which is endorsed by the American Institute of Architects, and by newspapers and magazines, to call public attention to better designs for small homes. The award of annual medals will supply a new incentive to the architectural profession in this field, will develop public appreciation of architectural design, and, by stressing the best in small house architecture, will help to overcome bit by bit the monotony and drabness of the residential streets of our cities, towns and villages by the construction of houses individual in design and embodying high architectural standards."

COOPERATIVE PROFESSIONAL PUBLICITY*

by L. G. SCHERER, Architect

MY address is the result of a very intensive study of every phase of the question of cooperative professional publicity, and in a large measure representative of the opinions of the leading architects of the country, who have written me recently relative to such a program, and I might add that a number of them expressed the hope that the State Association of California Architects will take constructive steps towards the realization of it during this convention. If we will, we can lay the foundation for a great educational campaign—a campaign dedicated to and resulting in tremendous human welfare, and in professional benefit. Architecture can do that.

To day the profession is confronted with a condition of uneasiness as a result of the consciousness that we are straggling behind in this great game of life. Gentlemen, it is highly imperative that the profession get in tune with our times and adopt scientific business methods. If we are to progress, we must analyze conditions and apply their laws. There is no alternative.

Every progressive architect who has a deep interest in the welfare of the profession feels that soon steps must be taken which will enable us to more completely fulfill our mission. This present reaction reflects a clearer conception of the principles of modern business, a more complete understanding of its methods and functions. Architecture is suddenly becoming conscious of itself, of its business significance and the necessity of carrying the message of its importance to the public. This can be done most successfully by means of collective publicity, which means paid publicity, or to use the objectionable word "Advertising". We have been buzzing between silence and publicity for several years now and little has been done. Our disheartening response to the efforts of several of our leading journals indicates that, as yet, we are not sold on the idea. We are not sold because religiously we have permitted our adherence to ethical conceptions preventing us from making an open minded investigation of the philosophy of advertising. We have been so completely embedded in ethical fire proofing that we are almost completely insensitive to its achievements, but today the elements are penetrating and our present structure is weakening. Let us not regret it, because in its place something monumental, magnificent, and in harmony with the best interests of the public and the profession will arise.

At the time the Directors of the American Institute of Architects voiced their objection to the use of advertising, and established the ethical codes which have thus far regulated our behavior, advertising was in its infancy, and suffered the usual juvenile diseases. Its use was devoted principally to the selling of questionable products and services. It was even so bad that when John Wanamaker opened his store in Philadelphia, the better merchants of the day considered a card or a brief announcement all their dignity could permit to appear. John Wanamaker recognized the need of educating the public and his vision told him that advertising could become an instrument for public benefit. Advertising was the first step towards raising business to higher standards, to humanize it. Since then advertising has become chastened—a thing of morals. It has become one of the greatest civilizing influences in the world today. Its purpose is not only a necessity

*Address delivered at the State Association of California Architects' Convention, Del Monte, California, October 10, 1930.

but its aims are consistent with the highest principles of human association. It has changed the economic statute of at least one fourth of our people; it has improved living conditions; it has educated man to higher and finer standards of living. Yes, it has done more than this—it has made this world a better place to live in. The men of vision, the far sighted, progressive leaders of business have grasped, and accordingly acted upon this idea. They recognize that advertising is a vital necessity to the up-building of any business—that public confidence, good will and understanding are indispensable.

Some years ago the Bell Telephone Co. said "Our business is different", when the idea of paid publicity was proposed to them. However, today every large utility company advertises, and advertises extensively. It has been said that our business is different, and this is an unfortunte misconception. Architecture may differ in motives, but not in principles, not in fundamentals. We are in business to render a service, a service which we know to be indispensable to progress. To more completely fulfill our mission, it becomes imperative that we do what we can to educate the public as to its importance.

The gigantic step taken in advertising in the last decade has been cooperative advertising. The great campaigns of recent history, such as "Save the Surface", educated the public as to the value of protecting their building investments by keeping them protected with paint; it did a great deal to beautify our communities. Such advertising is dedicated to the common good—it is educational. There have been innumerable other campaigns of this nature, such as the Laundry Association, whose campaign by the way, increased their business by 2000%, and has eased the lives of millions of women. One of the most recent cooperative campaigns to be inaugurated is that of the furniture manufacturers. They have subscribed over five million dollars to a fund to educate the public to the appreciation of better and finer furniture. They have realized that the interior of the average American home is not in harmony with present living ideals. Today the average American is more proud of his automobile than his home. He buys a new car every year, not because the new car surpasses in performance, but because the automobile manufacturers realize the value of selling the public on beauty rather than performance. Many an American is today driving an expensive car, and sleeping in a brass bed. Why? Because he has not been sold on the idea of improving his home environment. This disorganization, this condition of modern life is due in a large measure to the fact that the American home lacks interest, convenience and comfort, artistic expression. The architectural profession has within its power the opportunity to render invaluable service to humanity along these lines. It can be done by publicity. Publicity believes in erecting a castle on the precipice instead of a hospital at its base.

The monumental achievements of business have been to a large measure the result of cooperative effort. Association is the first essential of progress in any endeavor. The many associations of modern businesses today is one of the greatest steps in human evolution. Secrecy and underhanded methods are fast disappearing. Men are fast learning that greater success can be achieved through cooperation and gentlemanly competition. The larger and more general the association, the greater are the possibilities of improvement. Men that cooperate in an enterprise that is worth while, come to understand each other, they realize that no man standing alone can achieve the degree of success he can if he cooperates with others. Our profession will progress only in proportion that we get together and intelligently apply our accumulated knowledge to the amelioration of conditions.

Ethics, the science of conduct, is a study of right and wrong in human relations and as human relations are subject to evolution, an invariable consistent code can never exist permanently. When we discover that we can no longer serve to our fullest capacity by observing certain formulated codes of ethics; when they prove a barrier to the fulfillment of our responsibility to society, it behooves us to alter them to fit time and

place. The new forces which progress has brought into the world will either compel us to intelligent action or overwhelm us. The profession that does not occasionally study the fundamentals of its business, its possibilities and performances, and look things squarely in the face; that does not adjust its principles to existing conditions, is playing chance against law. We cannot live by chance—progress does not happen that way.

There is something anomalous about a profession so vital, so closely interwoven into the life of man, and which depends so much upon public understanding and appreciation for its growth and existence, not availing itself of the means to educate the public. Architecture has not progressed in consistence with modern life, because the public is unfamiliar with the comprehensiveness of its purpose, the extensiveness of its services. We have thwarted our progress by our silence. General appreciation is wanting because people do not understand our profession. To them it is not only an impenetrable mystery, but facing the situation squarely, the masses to a large degree, hold the opinion that the architect is an unreliable, irresponsible burden to the building world. As a result the profession has been ruthlessly exploited.

We have a host of antagonists, those of related businesses, who to a considerable extent have reduced our profession to a state of subserviency. The profession has received many a black eye from those who usurp our rightful positions. This condition is more general than we may appreciate, and too there are those in the profession who do advertise, those who know no code of ethics, and whose business conduct tends to belittle the standing of the profession. These things now exist and something must be done to counteract them. Such an undertaking will require complete cooperation, a mutual appreciation of each other's problems and a desire to be of assistance to every other man in the profession, regardless of his status. We must remember that the character of our profession is not builded upon the reputation of a few but on the general reputation of all those who are a part of it. The architectural profession has a serious mission to fulfill. Is the realization of this creed unethical? The deeper one delves into this question, the more one becomes convinced that not to intelligently educate the public is unethical, unmoral. To neglect to do this is to remain derelict in the responsibility humanity has graced us with, thwarting the destiny of the profession and curbing the development of art and culture. Unless architecture exerts every effort to extend the field of its services, it cannot claim to be advancing in fundamental social value.

The most important function of our educational campaign must be to educate the public to the economic importance of our profession. Man is more interested in costs than in esthetics, but once we sell him on the economic importance, the esthetic will take care of itself. Once we educate him to this phase of our service, it will be less difficult to obtain better fees and more consideration from him, which will enable us to create better architecture. As a profession we have no right to keep from the public those things which would tend to give them better buildings for the money they invest, those things by which they would profit, those things they should know. It has been estimated that of the four billion dollars spent last year in building, three billion of it has resulted in a liability rather than an asset. This is the greatest economic waste of time. President Hoover's Building Commission has just announced that within the next twenty years over sixty billion dollars will be expended on residential construction alone. This money is going to be spent, and if we are to fulfill our duty to man, we must do what we can to see that it is spent intelligently and not wasted in the tills of the hammer and saw artists. We must awake to a new consciousness of our condition, our possibilities, our responsibilities and to the realization that only by assuming them can we fulfill our destiny. Unless we do something to educate man as to the importance of our profession, we are traitors to the trust that society has given us. We must reconstruct our conceptions of the ethics of the profes-

sion. If they are inimical to public welfare it becomes a moral obligation. Modern business methods must be adopted and with it a cooperative educational campaign addressed to and circulated among the masses. This campaign will educate them to appreciate better architecture and therefore demand it. The status of the profession will rise because of it—we will have more buildings—better buildings, finer architecture.

We stand on the threshold of the greatest period of architectural history. Our future will be written in terms of our action today. Our campaign can be effected by securing the cooperation of the building material businesses, but it must be done in consonance with the high principles and dignity of the profession. It has been stated that to secure such cooperation will entail a dangerous responsibility that will cast its shadow over the brow of our profession, but if we analyze the conditions, we find it is not quite consistent with facts, the manufacturers today are spending millions of dollars in every conceivable way to establish the good will of the architects. The greatest thing that can be done for the benefit of the profession and the benefit of the manufacturers would be a cooperative educational campaign sponsored by the architects and financed by the material men. Nothing would more quickly and more economically establish mutual good will than that. The manufacturers would profit because of more building and the assurance that their products are intelligently used, and the architect would profit because of the creation of a larger field of service. His remuneration would be increased because once educated, the public would be more willing to pay legitimate commissions for his services. The public would not look with askance upon this program, they would welcome and endorse it. It would be the greatest step ever taken by the profession for public welfare.

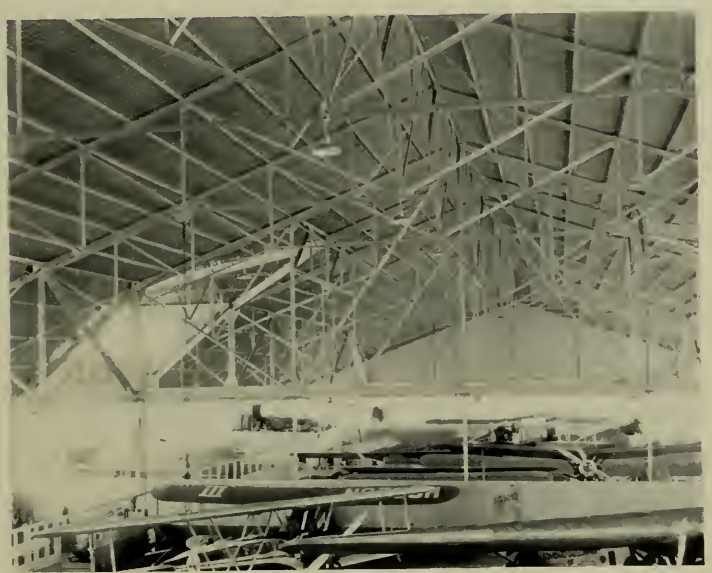
Let us hope that today some definite measures may be taken to further this program and that within a short time the American Institute of Architects will take it upon itself to further it. But in the meantime, the State Association of California Architects must commence its own program.

Concomitant with this, let every architect do what he can in his own way to help the cause. Individually let us go into our communities and preach the gospel of good taste and logical planning and awaken the people to the ugliness that everywhere engulfs them. Collectively let us enthusiastically and seriously take up the question of an educational campaign. It is an integral part of our work. It is our duty to the society of which we are a part. This condition can be made manifest only through whole hearted, concerted and intelligent effort, and every architect, irrespective of past achievement or success attained should unite and do his part in the furthering of it. Once this is accomplished, the architect will have come to himself. He will not only gain a more favorable livelihood, but because of it, he will gain a broader life, become a finer citizen, a better man and architect. I see him arising a new man, with a truer and clearer perception of who and what he is. Because of the consciousness that his profession has attained a position of high regard in the eyes of the world, that its importance is generally recognized, he will do bigger, better and greater things—he will serve society to his fullest capacity.

ENGINEERING

and

CONSTRUCTION

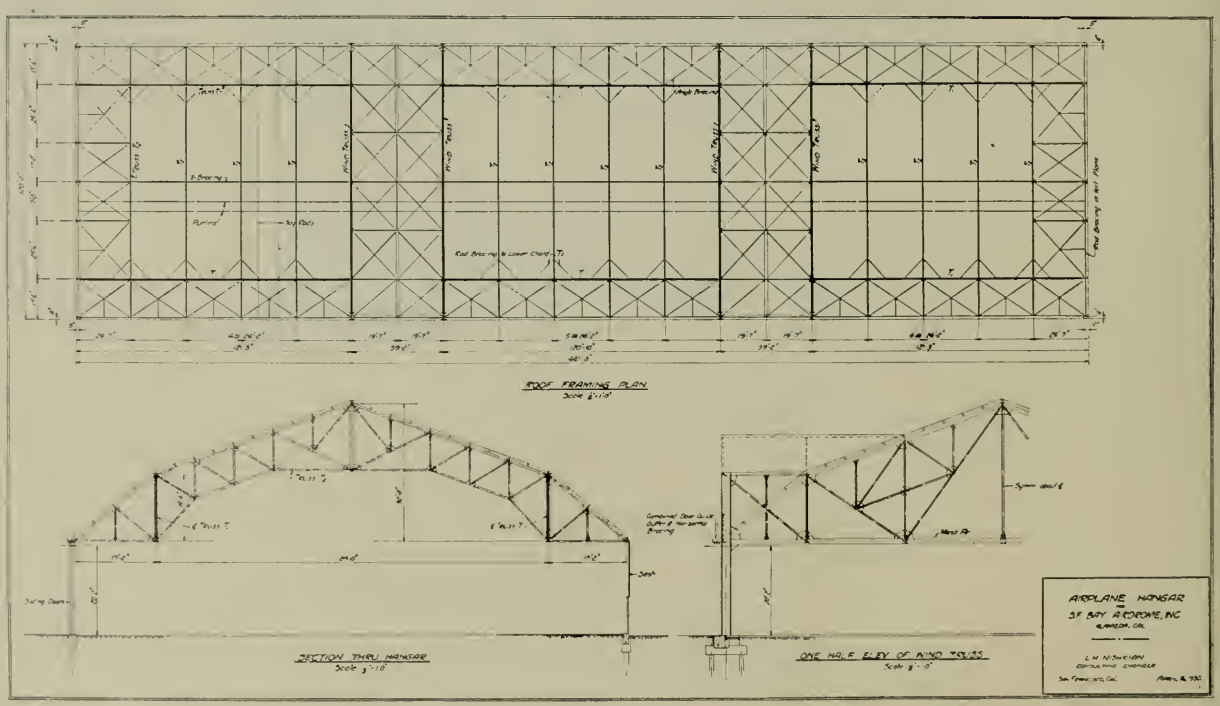


INTERIOR OF HANGAR SHOWING ROOF DESIGN
L. H. Nishkian, Structural Engineer

Featuring

The San Francisco Bay Airdrome
Alameda, California

STEEL FRAME OF SAN FRANCISCO BAY AIRDROME HANGAR, ALAMEDA, CALIFORNIA
L. H. Nishkian, Structural Engineer



ROOF PLAN AND SECTION, HANGAR FOR SAN FRANCISCO BAY AIRDROME, ALAMEDA
L. H. Nishkian, Structural Engineer

Structural Steel by Western Iron Works *Lindgren and Swinerton, Inc., Builders*

SAN FRANCISCO BAY AIRDROME, ALAMEDA
This building is 441 feet 8 inches long by 120 feet wide, supported by 12 columns

SAN FRANCISCO BAY AIRDROME

by JOHN J. GOULD, S. E.*

THE hangar recently completed for the San Francisco Bay Airdrome, Inc., in Alameda, California, has a useful ground area of 53,000 square feet. The hangar consists of three bays, measuring 120′-0x120′-0. Two bays of 40′x120′ are used for offices, waiting rooms and shops, and two mezzanine floors of the same area are occupied by the executive offices of the various air transport companies. The whole ground area, 120′x440′, is unobstructed and could be used for airplane storage.

The clear height of the ground floor is 20′-0″. The construction of the hangar is of non-combustible material throughout, except parts of the office floors and partitions. The structural steel frame was let to the Western Iron Works by the general contractor, Lindgren-Swinerton, Inc., on the basis of competitive designs submitted by different steel contractors. The design shown on the illustration was chosen by the owners for its appearance and economy.

The framing consists briefly of main supporting trusses called "Wind Trusses", on which secondary trusses called "Trusses T1" were supported. Trusses T2, with arched bottom chords, were carried on Trusses T1. The arched bottom chords resulted in a pleasing appearance and provide a large air volume within the hangar. Continuous Purlin channels form the immediate roofing supports. The weight of the structural steel frame, including supports for sash and wall sidings, amounts to 8.75 pounds per square foot of supported area. In designing the frame the condition was imposed that no wall would be permitted above the door openings length-wise of the building.

The structure was designed to carry in addition to the dead loads, a live load of 20 pounds per square foot of roof and a wind load of 15 pounds per square foot of projected area. Unit stresses as recommended by the American Institute of Steel Construction were used.

The foundation consists of wooden piles with reinforced concrete caps. The ground floor was built as a reinforced concrete slab, and designed to carry the 32 passenger F-32 Fokker planes.

[Please turn to Page 106]

*Office of L. H. Nishkian, Consulting Engineer, San Francisco, Calif.

The ARCHITECT'S VIEWPOINT

¶ *Airport Architects have Wonderful Opportunities*

¶ *A Stride Forward in Church Architecture*

¶ *Uncle Sam Needs a New Hall of Fame*

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HAROLD W. DOTY . . . *Portland, Ore.*

CHARLES H. ALDEN . . *Seattle, Wash.*

THE development of air service has brought into being landing fields and stations by the hundreds scattered throughout the length of the land. The requirements of taking off and landing air craft has naturally involved the acquisition of tracts of large area and the buildings serving the purposes of housing the craft and caring for the needs of passengers and freight necessarily must be thought of in terms of large scale and area.

Although air transportation is yet in its infancy its development has been carried far enough to establish some insight into its organic needs and proportions and to convince the promoters that what is done architecturally and structurally must be done on a large scale. It is America's first opportunity to express herself in a grandiose manner and it will be interesting to see what the architects will do with the problems as they are placed in their hands, one after another.

California and the Mountain States in general have superb opportunities for this novel and wonderfully beautiful expression. With their expansive, level plains bordered by beautiful hills and mountains, much can be done architecturally to be in keeping with such an inspiring background and *entourage*. The present poverty stricken vocabulary of forms of Modern Art will grow of its own volition to meet the needs of this new expression. The problems will teach designers to think in larger terms than they have in the past and "human scale" will have to be eliminated from the question.

Then, as man learns to land his air craft safely in smaller areas, the need of extensive fields and grandly disposed buildings will lessen but the experience of thinking in large terms will have been salutary and undoubtedly will react helpfully upon the public at large.

The roofs of buildings will come in for serious consideration as to design,—in fact, this phase of the problem is already being met and solved. Buildings that appear beautiful from the sky are bound to be beautiful from the ground and the earth bound pedestrian will gain that much benefit from what is evolved from the air. One can only hope and pray that the outdoor advertising man will not be allowed to take advantage of air travel and have the flat roof of buildings covered with illuminated advertisements.

* * *

FINISHING the interior of St. Vincent's Church in Los Angeles marks a mighty stride forward in the development of ecclesiastical architecture in Southern California. Originally designed by Albert C. Martin, the church building was and is an outstanding example of Mexican Spanish Colonial work of the type of Churriguera's influence in the 17th century. The interior work was placed in the hands of Dr. Ralph

Adams Cram and the completed whole is satisfying indeed. The *retablo* of the main altar is a work of great size and magnificence, richly overlaid with gold and painted in polychrome, comparable with such *retablos* as that at Tepozotlan and the side altars at Zacatecas. The more intimate beauty of the Lady Chapel and that of St. Joseph with their superbly coloured bas-reliefs forms flanking for the central motive while the treatment of the transept altars and the ceiling of the whole church brings the interior into an harmonious *ensemble* worthy of study on the part of all students seriously interested in the development of ecclesiastical art.

* * *

THERE has been a widespread interest in California's contribution to the National Statuary Hall at the Capitol in Washington, not only in the Golden State but in all parts of the country. The selection of California's candidates for perpetual fame was wise and generally satisfactory. That of Father Junipero Serra, Apostle to the California Indians, was outstanding. That of Thomas Starr King was equally so, although the activities of the famous pioneer are not so publicly known. The romantic life and works of the uncanonized patron of California are familiar to everyone born in or adopted into the state and held as his natural legacy.

The sculptural work on the effigy of the Franciscan Junipero was entrusted to Etore Cadorin, a Venetian sculptor who has made his home in Santa Barbara for some years. There is very little extant record of Father Serra in portraiture and Cadorin had little to work upon save a minor oil portrait or two but the results are convincing indeed. The statue will undoubtedly raise the general average quality of the collection at the Capitol which, unfortunately, is nothing to brag of.

The time has come when an adequate setting for the monuments of the Nation's heroes as selected by the several states should be carefully and prayerfully made. As it is, some sixty odd statues, busts and reliefs are crowded together in a rotunda with the general effect of the back yard of a not very orderly ornamental staff establishment. As a symbol of fast disappearing State Sovereignty this may be appropriate but it is not good art and it holds the country's artistic standard, as well as its patriotic ideals, up to contumelious ridicule.

* * *

WHY should not a fine site be set apart in the Nation's Capitol for an adequate and splendid Hall of Fame? Bays within could be allocated to the several states. As a sentimental value attaches to most of the statues already contributed they must be retained. But much could be done to improve them by designing new bases, plinths or backgrounds and bringing the general ensemble into something resembling harmonious order. The building itself might be dedicated to the Sovereignty of the Commonwealths and become in an especial sense the headquarters of their Governors when officially in the Nation's Capital.

The release to the public of Haig Patigan's sculptural conception of Thomas Starr King, companion piece to Cadorin's Father Serra, is awaited with much interest. It would not be out of place to have replicas of these two statues placed in California. Los Angeles in particular would be much benefitted thereby as it is notoriously lacking in public sculptural work.

CARLETON MONROE WINSLOW, A. I. A.

EDITORIAL CHAT

WE read in the daily press and in the pictorial and technical magazines that a great deal of money is being wasted on inadequate and poorly situated airports—a condition that has lead experts to conclude that it is "up to our Architects, Engineers and City Planners to solve America's airport problems". "They alone," says Tyler Rogers in the *Architectural Forum,* "have the background needed to handle such operations in a constructive and farsighted manner, and they lack only an appreciation of some basic aeronautical requirements."

"Up until recently," says *Western Architect,* "the construction of airports has been considered a function of government. It was thought of in much the same fashion as are seaports and highways. Within a short time, however, we have seen the formation of a number of corporations whose purpose is to establish and operate chains of airports.

"But aside from these private commercial enterprises, important as they are, there is the larger question of municipal airports, not only in the big cities, but in the smaller centers as well. There is today not one large city in the country which is not actively engaged in the construction of an airport, and in many of our smaller cities the question is indeed a live one.

"Some little attention has been given to the architect's participation is this general movement. Last year the Beaux Arts Institute of Design gave a problem, the purpose of which was to stimulate the interest of the student architect, and recently the Chicago Chapter of the American Institute of Architects devoted its monthly meeting to a study of the airport problem. But the general body of architects has to date left the problem high and dry, and those few who have thought about it have not as yet accomplished much. As a profession, however, we are presently going to awaken to the fact that here is a tremendously interesting problem that only the mind trained to think in terms of "big plan" can solve."

Robert J. Pritchard in a recent article in *Western Flying,* says that airport planning "is being carried on with a general and frankly admitted, uncertainty as to just how it should be done. Airport operators are vainly peering into the future to judge as near as may be the conditions of air traffic with which they will have to contend one year, two years, or five years hence.

Unquestionably, here is a vast new field of activity that involves very important problems in architecture, engineering and city planning. And to date architects have done comparatively little to take their logical place is this new work. A bulletin published by the Department of Commerce in 1929 lists 28 organizations or individuals rated as airport designers and constructors. Of these 28 not over four or five are architects or engineers serving in a purely professional capacity on design problems. The others are former aviators who have entered this new field, or construction organizations that have seized the opportunity to capture desirable contracts of this character, and in a few instances companies that have been formed to advise professionally on airport designs, calling themselves "airport engineers." It is significant that so few well trained and well established architects and engineers or city planners have yet achieved recognition in this field.

SAN FRANCISCO BAY AIRDROME

[Concluded from Page 103]

The wall siding consists of No. 20 gauge copper bearing steel, while the roofing is built of No. 20 gauge Truscon steel I deck, covered with successive layers of immulsified asphalt, roofing felt and aluminum paint.

The doors and sash frames are of steel and of standard design.

R. St. John, Associate Member, Am. S. C. E., is manager of the San Francisco Bay Airdromes, Inc. The hangar was built in 60 working days, at an approximate cost of $110,000.

WITH the ARCHITECTS

STACY-JUDD'S FINE WORK

Robert B. Stacy-Judd, architect, explorer and author, exhibited some fine examples to illustrate the evolution of a new style of architecture, in the Architects' Building Material Exhibit, Fifth and Figueroa Streets, Los Angeles, during the past month.

Included in the exhibition was a series of photographs of the Maya ruins in Yucatan, showing the temples and palaces of Chichen-Itza, some of which covered as much as twenty-five acres of ground. With the photographs of the ruins were examples of Mr. Stacy-Judd's first attempts to use this style, and the difficulty he found in adapting the ideas that first came to his mind. These drawings show the progress made in eight years of intensive study, and the solutions that finally rewarded the architect in his efforts to create an acceptable and pleasing style.

ARCHITECT HOME AGAIN

Mr. and Mrs. W. R. Yelland have returned from their trip around the world and are at home for the winter at the Venetia apartments in Oakland. They visited Japan, China, British Malaya, Burma, India, Egypt, Palestine, Syria and Turkey, the Islands of the Aegean Sea and thence to continental Europe and England. They motored across the United States home. Mr. Yelland has reopened his offices in Oakland for the practice of architecture.

LOS GATOS BANK

Henry A. Minton, architect, Underwood Building, San Francisco, is preparing plans for a one-story, reinforced concrete and artificial stone building for the Los Gatos branch of the Bank of America.

The preliminary estimates of cost is around $60,000. Bids are expected to be called about the last of November.

TEXTILE TOWER

Plans have been completed by Earl W. Morrison, architect of Seattle, for Seattle's newest sky-scraper to be known as Textile Tower. Construction of the building started last month with over 70 per cent of the structure already leased. The plans call for steel frame with exterior walls of brick and terra cotta.

MECHANICAL ENGINEERS BUSY

William E. Leland and Harry S. Haley, consulting mechanical engineers, 58 Sutter Street, San Francisco, report one of the busiest years the firm has enjoyed. Their office at present is at work on specifications for the War Memorial Group in the San Francisco Civic Center, Federal buildings in Washington, D. C., and San Francisco for Arthur Brown, Jr.; the Crocker residence in Hillsborough; a county building for Binder and Curtis in San Jose and a group of school buildings at Santa Barbara for W. H. Weeks. Specifications have been completed by the same firm for the Paramount Theater in Oakland, Miller & Pflueger, architects; a theater for Warner Brothers, Oakland, and one for the same owners in Los Angeles, G. A. Lansburgh, architect, and the $3,000,000 Olympic Club building, San Francisco.

DATA ON ARCHITECTURE

The Oregon Chapter of the American Institute of Architects is collecting photographs and descriptions of all classes of Oregon buildings erected prior to 1880, having architectural or historic interest, to be housed with a national collection in the library of congress at Washington, D. C. The Chapter's committee in charge of the work is composed of A. Glenn Stanton, chairman; Harold W. Doty and Jamieson Parker.

RETURNS TO REOPEN OFFICE

Clarence Cullimore of Bakersfield, who recently returned from a study trip in Spain, has again resumed the practice of architecture in the Kern County city with offices at 10 Oleander Avenue. Mr. Cullimore has completed plans and specifications for a $25,000 residence for Mr. and Mrs. Lloyd Stroud at the Stockdale Country Club, near Bakersfield, and construction is under way.

MILLS BUILDING ADDITION

The proposed twenty story Class A addition to the Mills Office Building, San Francisco, is to go forward with all possible speed, a contract for the $1,000-000 structure having been awarded to Lindgren and Swinerton, Inc., who have sub-let the structural steel to the McClintic-Marshall Company. There will be more than 3400 tons of steel used.

APPRAISAL ENGINEERS

Arthur A. Semsen and Franklin W. McLaren, both of whom are registered civil engineers, have recently formed a partnership known as Semsen & McLaren, appraisal engineers, for the purpose of making valuations and appraisals. A. A. Semsen has been a valuation engineer for more than fifteen years, and was at one time associated with the Interstate Commerce Commission on valuation surveys. F. W. McLaren is a graduate of the Massachusetts Institute of Technology and has been with Mr. Semsen for the past four years. Appraisals have been completed of many large industries on the Pacific Coast.

OAKLAND STORE BUILDING

Plans have been completed by Albert J. Evers, Underwood Building, San Francisco, for a one story and mezzanine store building to be erected on the southwest corner of 19th Street and Telegraph Avenue, Oakland, for the Twentieth and Broadway Realty Company. Modern style of architecture has been adopted by the architect, who states that the building will cost approximately $75,000.

EDUCATIONAL BUILDINGS

The University of San Francisco, formerly St. Ignatius College, has appointed Edward A. Eames architect of a group of new educational buildings which eventually will represent an expenditure of $5,000,000. These structures are to include an auditorium, library, gymnasium, science hall, medical unit, students' union and stadium.

SPANISH COLONIAL CLUB HOUSE

Plans have been completed in the office of Willis Polk & Company, 277 Pine Street, San Francisco, for a Spanish Colonial club house which the San Francisco Park Commission will build in Sharp's Park. This will be the third municipal golf course club house to be built in San Francisco.

BERKELEY HILLS RESIDENCE

A Spanish residence is to be built on the crest of the Berkeley Hills in Contra Costa County, for John Henry Nash, from plans by Mark Daniels, architect of Southern California. The owner plans to spend close to $50,000 on his new bayview home.

RICHMOND THEATER ALTERATIONS

Pans have been completed by Clausen and Amandes, Hearst Building, San Francisco, for extensive alterations to the Fox-West Coast Theater, Richmond.

OAKLAND TOWER HOTEL

A fourteen story Class A tower is being designed as a second unit to the Hotel Lake Merritt, formerly the Madison-Lake Hotel at Madison Street and Lakeside Drive, Oakland. W. E. Schirmer is the architect. The promoters will spend $1,000,000, the improvements to start early in the new year. About 275 guest rooms will be added.

AUTO SERVICE STATIONS

Plans have been prepared by James S. Arnott, 417 Market Street, San Francisco, W. Adrian, structural engineer, for a group of automobile service stations and display rooms to be built in San Francisco and other cities of Northern California for various Ford auto sales agencies. The buildings will cost from $15,000 to $25,000 each.

BOHEMIAN CLUB BUILDING

The San Francisco Bohemian Club has voted unanimously to replace its present building at Taylor and Post Streets with a modern fireproof structure to cost $800,000. The club is considering the advisability of holding an architectural competition, to be participated in by six or eight invited San Francisco and Bay District architects.

13-STORY STUDIO BUILDING

Lloyd Rally of Los Angeles, is preparing plans for a thirteen story reinforced concrete theater, store and studio building to be erected on the southwest corner of 12th Street and Vermont Avenue, Los Angeles, for H. E. Rawlinson, President of the Los Angeles Conservatory of Music. The building will cover ground area 46 x 126 feet and will cost $300,000.

CONCRETE CHURCH

Working drawings are being prepared in the office of Newton and Murray, Architects' Building, Los Angeles, for a steel frame and reinforced concrete church to be erected at Selby and Ohio Avenues, West Los Angeles, for the Church of St. Paul the Apostle. It will seat 1300 persons and will cost $500,000.

REMODEL OAKLAND THEATER

The Uptown Theater on College Avenue, Oakland, formerly known as the Chimes, is to be extensively remodeled from plans by A. A. Cantin, architect of San Francisco. Additions to the bacony will increase the seating capacity and the building outside and in will be repainted and decorated.

STEEL TANK COMPETITION

Appreciating the need for more aesthetic commercial structures, the Chicago Bridge & Iron Works, of Chicago, is sponsoring a $4000 prize contest for improved designs in elevated steel tanks.

Prizes are offered for the best eight renderings as follows: First, $2000; Second, $1000; Third, $500. Five honorable mention prizes of $100 each.

Entries in the competition will consist of two drawings of a typical elevated tank with a nominal capacity of 200,000 gallons, a height to top of approximately 110 feet, a height to bottom of not less than 85 feet, and a riser not less than five feet in diameter.

One drawing will include a direct elevation and two horizontal sections or plans ¼-inch scale. The other will be a perspective drawing to the same scale.

The entries will be received anonymously, displayed in a suitable room in an impartial manner and judged by a jury of award consisting of Howard Cheney, president of the Chicago Chapter, A. I. A.; R. W. Zimmerman, architect of Chicago, and George T. Horton, president of the Chicago Bridge & Iron Works.

Albert M. Saxe of 430 North Michigan avenue, Chicago, Ill., has been appointed professional advisor for the competition and will handle all communications regarding it. A brochure giving complete details of the competition may be secured by addressing Mr. Saxe.

The competition is open to architects, engineers and draughtsmen all over the world. Applications for entry will be received until December 1, 1930. The contest closes March 1, 1930.

AMERICAN ACADEMY COMPETITIONS

The American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting and sculpture.

In architecture the Katharine Edwards Gordon fellowship is to be awarded, in landscape architecture the Kate Lancaster Brewster fellowship, in painting the Jacob H. Lazarus fellowship provided by Metropolitan Museum of Art and in sculpture the Parrish Art Museum fellowship.

The competitions are open to unmarried men not over 30 years of age who are citizens of the United States. The stipend of each fellowship is $1500 a year with an allowance of $150 to $300 for materials and incidental expenses. Residence and studio are provided at the Academy, and the total estimated value of each fellowship is about $2500 a year.

The term of each fellowship is three years. Fellows have opportunity for extensive travel and for making contacts with leading European artists and scholars.

The Grand Central Art Galleries of New York City will present free membership in the Galleries to the painter and sculptor who win the Rome Prize and fulfil the obligations of the fellowship.

Entries for competitions will be received until February 1st. Circulars of information and application blanks may be obtained by addressing Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York City.

APPOINTED ARMY ARCHITECT

Douglas Dacre Stone, of Oakland, has been appointed official architect for the Salvation Army on the Pacific Coast. Mr. Stone has recently completed plans for extensive remodeling of the Army Citadel at Portland, Oregon, and he has made preliminary plans for a new building for the Army in Los Angeles. Construction of a building in Oakland is underway. Other work is planned next year in various cities on the Coast.

OAKLAND CHURCH

Working drawings are being completed by W. E. Schirmer of Oakland, for a reinforced concrete church to be built at Emerson Street and Excelsior Avenue, Oakland, for St. Margaret's Parish. The edifice will cost $65,000, exclusive of a parish house, construction of which is underway.

MAYBE THIS IS THE ANSWER

Kind and philosophic friend: "The way for you to straighten out your financial difficulties is to live within your means for a while."

The financially embarrassed: "Live within our means —I should say not. We may be poor, but we are not as badly off as that!"

25 STORY SEATTLE BUILDING

Plans have been completed by Earl W. Morrison, Lloyd Building, Seattle, for a twenty-five story class A store and office building, for the City Light Company. The Sound Construction Company has been awarded the contract at approximately $2,000,000.

SAN FRANCISCO SCHOOL BUILDING

Dodge A. Riedy, architect of San Francisco, has had his preliminary plans approved for additions to the West Portal School. Drawings call for a two story reinforced concrete building with classrooms and auditorium.

PERSONAL

S. Charles Lee has moved his offices from the Petroleum Securities Building to the Park View Building, 204 W. Seventh Street, Los Angeles.

James Arnot, architect, has established himself in the Hansford Building, 417 Market Street, San Francisco. Mr. Arnot has plans under way for a number of Ford agency service and sales buildings to be built in various cities in Northern California.

George D. Riddle has moved from 208 Central Building, Long Beach, to 201 Pacific Southwest Bank Building, Long Beach.

G. E. Koster, formely in the offices of Clarence A. Tantau and Bernard Maybeck, architects of San Francisco, is now a registered architect in the State of Nevada with offices at 300 California Avenue, Reno. Mr. Koster would like all manufacturers' catalogs and other trade literature forwarded to his new address.

Ralph Wyckoff, architect of San Jose, has been elected president of the San Jose Commercial club. He was given a luncheon October 7 by the club directors.

Frederick H. Reimers, formerly located in the Franklin Building, Oakland, announces the opening of new offices at 233 Post Street, San Francisco.

Herbert A. Blogg, Lyon building, Seattle, has accepted a position as assistant architect in the office of the Supervising Architect of the Treasury Department, Washington, D. C. where he expects to remain for six months.

Blaine Ackley, architect of Vancouver, Wn., recently employed by the Northwestern Electric Company, has accepted a civil service position as inspector of construction. He has located his family at Dupont, Wash., and will supervise the construction of 40 residences.

George Gove, of Heath, Gove and Bell, A. I. A., Tacoma, recently visited Chicago, New York and Washington, D. C. While in the latter city Mr. Gove held a conference with Federal officials regarding the United States penitentiary at McNeil Island, for which Heath, Gove and Bell are doing considerable work.

Victor Noble Jarrot Jones has been admitted as an associate member of the Washington Chapter, A. I. A. Mr. Jones, after graduating from the architectural department of the University of Washington, pursued a graduate course at the University of Pennsylvania. He is now a member of the firm of McClelland, Pinneh and Jones, Seattle.

O'Brien & Peugh, architects, have moved from 315 Montgomery Street to 333 Montgomery Street, San Francisco.

J. S. Hudson, president of the Washington State Society of Architects, Seattle, spent two weeks of October visiting California friends.

ARTHUR HATELEY

Arthur Hateley, senior partner of Hateley and Hateley, plumbing contractors of Sacramento, and a resident of the Capital City since 1907, died the early part of October after a short illness. The deceased was the father of Thomas J. Hateley, junior partner of the business which will be continued under his direction.

GOTHIC ORGAN CASES

Arnold Constable, architect of San Francisco has completed final plans for the Gothic organ cases to be installed in St. Patrick's Catholic Church on Mission Street, and St. Dominic's Church, Bush and Steiner Streets, San Francisco.

COLUSA COUNTY HOSPITAL

Working drawings are being prepared in the office of Otto Deichmann, 110 Sutter Street, San Francisco, for a two story administration building and a one story wing for the County Hospital at Colusa.

LARGE HOSPITAL ADDITION

A ten story addition is planned to the California Lutheran Hospital at Los Angeles from plans by Walker & Eisen of that city. The improvements will accommodate 300 additional beds.

ENGLISH RESIDENCE

Plans have been completed by James H. Mitchell, architect of San Francisco, for a $25,000 English home to be built in Burlingame for Dr. Wade H. Macomber.

ION LEWIS SCHOLARSHIP

Ion Lewis, prominent Portland architect, of the firm of Whidden & Lewis, who for forty years practiced their profession in Portland, has deeded income bearing property to the University of Oregon, through the State Board of Higher Education—to establish architectural scholarships for residents of Oregon.

The scholarship will be administered by a Managing Committee appointed by the State Board of Higher Education—one member of the corps of instructors of the School of Architecture and Allied Arts of the University of Oregon, to be nominated by the President of the University of Oregon, and two members of the Oregon Chapter of the American Institute of Architects, to be nominated by the Executive Committee of that organization.

The first members of the Managing Committee are Morris H. Whitehouse and Harrison Whitney, representing the Oregon Chapter of the American Institute of Architects, and Ellis F. Lawrence, representing the University of Oregon.

The Declaration of Trust provided that the place of any member of the Managing Committee who, because of relationship or otherwise, may feel himself not impartial—may be taken, for consideration of the specific case, by a substitute to be appointed by the other two members of the Managing Committee.

The income from the property, which should be something over $2200 per annum, after necessary expenses pertaining to the trust have been met, is to be employed by the Trustee in the payment from the net income, whenever such is available, to any person who shall have studied architecture, or practiced architecture, or who shall have been employed as an architectural draftsman in the State of Oregon for the period of not less than one year immediately preceding the Scholarship Award, as may be determined by the Managing Committee hereinafter provided for, for the purpose of enabling such person to pursue his architectural studies, either in the United States or other countries, as may be deemed best by the said Managing Committee; it being an express condition of this trust that the Trustee, during his administration as Trustee, shall endeavor to maintain a Travelling Scholarship or Scholarships in Architecture of the value at least of $1000.00, during each and every year, forever; provided, however, that should no suitable candidate be available for such Travelling Scholarship in the judgment of the aforesaid Managing Committee, the Managing Committee may award scholarship grants or loans to any deserving student of architecture, to enable him to secure architectural training in the School of Architecture and Allied Arts at the University of Oregon. Any award made hereunder shall be confined to persons who have been or are to be students of the University of Oregon, either as regular or as special students, enrolled in regular courses, extension courses, or in summer school of the University; provided that, should the Managing Committee determine that a candidate not so connected with the University of Oregon ought to be awarded a Travelling Scholarship, such person may qualify and receive the same by becoming a candidate for the degree of Master of Fine Arts, or such other degree as may be offered by the University of Oregon and for which he is eligible; and the work done by him while under the Scholarship Award may apply toward such degree, if satisfactory to the School of Architecture of the University.

EVERYTHING IS BEAUTIFUL

Beautiful bathrooms, beautiful pipes,
Beautiful bath-matts of numerous types;
Beautiful ranges, beautiful sinks,
Purples, violets, greens and pinks;
Beautiful boxes for pepper and spice,
Beautiful freezers, beautiful ice;
Beautiful baskets, cartons and cans,
Beautiful bottles and scuttles and pans;
Brooms and mops with beautiful sticks,
Beautiful hatchets and shovels and picks;
Beautiful skillets and kettles and phones,
Doormats and dishrags in beautiful tones;
But, Oh! those beautiful, beautiful BILLS.
Beautiful, beautiful, beautiful frills—

SOLVING ACID FUME "BUGBEAR"

"Fumes" have long been the "bugbear" of the builders of science buildings as well as manufactories where acids are used. When Dr. C. S. Adams, of Antioch College, Yellow Springs, Ohio, was ready to build the beautiful new science building now possessed by that school, he decided to try to develop a ventilating and exhaust system that would eliminate some of the common troubles of installation.

The duct system which was finally worked out has proved satisfactory, both from the standpoints of materials and design. It has many new features that are explained in an architectural bulletin just issued by the American Rolling Mill Company. The pamphlet is entitled "Ventilating the General Science Building of Antioch College." Architects and mechanical engineers will find some valuable information in this bulletin which will be supplied for the asking.

SOCIETY and CLUB MEETINGS

SOUTHERN CALIFORNIA CHAPTER

The October meeting of Southern California Chapter, A.I.A., was given over largely to listening to H. Roy Kelley's report of the recent convention at Del Monte of the State Association of California Architects. Mr. Kelley was quite enthusiastic about the convention which he believes is accomplishing considerable in an educational way.

H. C. Chambers, president of the Chapter, presided. The guests of the evening were Rufus B. Von Klein-Smid, R. P. Flewelling, father of Ralph C. Flewelling who designed Mudd Memorial Hall.

Barse Miller, a specialist in fresco work, gave an explanation of the technical process involved in fresco and demonstrated the method of using this material.

The meeting closed with a general discussion, led by Edwin Bergstrom, on contracts.

The following members and guests were present: Edwin Bergstrom, William Richards, Myron Hunt, Charles H. Cheney, Rufus B. Von KleinSmid, H. C. Chambers, Ralph C. Flewelling, Barse Miller, Eugene Weston, Jr., Reginald D. Johnson, Fitch H. Haskell, L. A. Parker, Alexander M. Knox, Horatio W. Bishop, David C. Allison, Robert H. Orr, Leo Bachman, M. L. Barker, Arthur W. Hawes, J. T. Zeller, Dwight Gibbs, William H. Kraemer, Austin Whittlesey, Samuel E. Lunden, Henry F. Withey, H. Scott Gerity, Paul J. Duncan, H. J. Reed Barrett, Carleton M. Winslow, W. T. Risley, C. Raymond Johnson, A. S. Nibecker, Jr., Roy Selden Price, Pierpont Davis, Sumner M. Spaulding, H. Roy Kelley, A. C. Weatherhead, J. J. Miller, R. J. Batchelder, R. P. Flewelling.

LOS ANGELES ARCHITECTURAL CLUB

The Los Angeles Architectural Club resumed its fall and winter activities with a dinner meeting at the Pollyanna tea room, 2228 W. Seventh Street, Monday evening, October 27th. Motion pictures, taken by the Automobile Club of Southern California on a recent tour of Mexico, were shown and R. A. Goodcell gave an interesting talk on the projected International Pacific Highway.

APARTMENT HOUSE NUMBER

The December ARCHITECT AND ENGINEER will be an apartment house number with more than forty pages of matter and plans of recent apartment buildings completed on the Pacific Coast.

OREGON CHAPTER, A. I. A.

The September 16th meeting was held in the Lipman Wolfe Tea room, those present being Messrs. Johnson, Brookman, Lawrence, Hinson, Bean, Wilson, Holford, Herzog, Schneider, Forrest, Jacobberger, Doty, Newbeury, Tucker, Crowell, Aandahl.

President Johnson gave a resume of work done by the executive committee during the summer months, when no regular meetings were held.

Mr. Parker inquired about the status of the Whidden & Lewis Memorial Tablet, and called the attention of the Chapter to the fact that although the Portland Art Commission had approved the idea and location of such a tablet, it has not yet seen the drawings for the tablet or given approval of same. The secretary was asked to obtain such approval before ordering the tablet made.

Mr. Crowell was asked by President Johnson to explain in detail all actions taken upon the proposed Champoeg Memorial. A notice to all members wherein Crowell explained several methods by which the Chapter could handle this problem had previously been circularized. No definite action was taken.

President Johnson asked for the reports by the Chairman of the various committees.

Mr. Bean, chairman of the Building Laws Committee, explained various problems which had been brought up by the Building Department, and on which this committee had been active. One specific case which as yet had not been approved by the executive committee was approved by this meeting. This referred to the question of whether or not the Code on stair handrails should be enforced in a case of single or two-family dwellings. The recommendation of the committee was to the effect that the Code be changed in such a way as to eliminate all requirements for handrails on wall or partition side where a stairway is partly or wholly enclosed by walls or partitions in single or two-family dwellings. On motion the report was approved.

Mr. Lawrence, chairman of the Education Committee, suggested that it might be well for the Chapter to get in closer touch with recent graduates in architecture, and induce them to become Junior members of the Institute. At the present time no Junior members are affiliated with the Oregon Chapter.

President Johnson urged the various committees to do constructive work in their respective lines and also asked every member of the Chapter, whether on a committee or not, to forward ideas on what and how to stir up interest in the work of the Chapter.

Mr. Jacobberger made a motion requesting the secretary to write to the Portland School Board asking if they had worked out any scheme for an athletic field for Lincoln High School. The Chapter would be glad to cooperate with the School Board to this end.—F. A.

President Johnson's Views

President Folger Johnson in a recent interview with reporters, discussed the 1930-31 working program of his organization as follows:

"Our biggest problem is that of city planning. In this the chapter is in a position to render a valuable civic service by preparation of material for the public that will enable the public to judge the benefits of planning in abstract and to intelligently judge the plans to be submitted to it for approval.

"Portland is about to have another city plan, or series of them, proposed for adoption. There is no question but that the general need for a definite city plan is recognized by everyone, but few have sufficient knowledge and information about the actual functions of a city plan and what its limitations are to be able to decide whether the plans submitted are suited to Portland or not.

"We cannot have engrafted on the city a plan that may be ideal in the abstract, but wholly unsuited to meet our peculiar local conditions. Whatever plan is approved must really fit Portland and solve the problems we are facing without destroying the city's identity and making it simply a standardized city. Portland has too many admirable features and characteristics that can be developed and accentuated to permit this being done, but such is possible if the people are not given the benefit of information that will enable them to choose the best.

"The Chapter plans to gather data for publication showing the major elements of the plan system. These will not attempt to set up a definite solution of our problems, but will be informative in general and offer alternatives for many elements of the plan.

"Authority for the Champoeg memorial buildings has been granted. This will be a monumental structure typical of the Oregon country, and we feel the design and construction should be entrusted to architects of this state. The Chapter favors an architectural competition, restricted to the architects of Oregon with the war department authorized to appoint the winner of the competition to be the architect for the project.

"A competition is fair and gives the younger men a chance that is not available if the award is to be by any other form of selection. Time is not the essence of the contract as in construction of more utilitarian types of buildings and ample time can be taken to get the best design. It gives genius a chance to rise and we feel that full support to the competition idea should be given.

"Revision of the architectural laws of the state to afford better protection to the public is also a need to be studied by the Chapter. It has been felt our laws are not sufficiently strong on this point, and we favor some law similar to the New York law which provides that architectural services must be obtained for any structure above an established cost limit."

WASHINGTON STATE CHAPTER

The regular monthly meeting of Washington State Chapter, A. I. A., was held at the College Club October 2 with President Borhek in the chair.

Mr. Holmes, reporting for a committee consisting of himself and Mr. Grant, stated that they had called on Mr. Osborne, who had been seriously ill, and were glad to find him much improved.

In the absence of Mr. Aitken, the chairman, Mr. Alden reported for the Committee on Public Information, stating the progress made in perfecting arrangements with Mr. Sinclair of the Builders Permanent Exhibit in Seattle for a radio broadcast in connection with other phases of the building industry. It was proposed to have the architects' program entirely distinct in its presentation and as it would represent the entire profession, it was suggested that financial assistance might be received from architects outside the Chapter.

The program which was proposed would consist of imaginary conversations participated in by a prospective home builder, bringing out the difficulties involved in building with the functions and usefulness of the architect. It was proposed by the committee to have an architectural clinic in connection with this radio broadcasting, giving an opportunity at the Builders' Exchange for prospective builders to confer with architects for the purpose of getting general information. Time being an important factor in getting the broadcasting under way, it was voted to refer the matter to the Executive Board, with full power to act after complete details had been received from Mr. Aitken.

Mr. Vogel reported for the Committee on Legislation the consideration that had been given by his committee to a revision of the existing architects' license law.

The use of home products on local government buildings was then brought up for consideration by Harlan Thomas, who reported on the progress made since the discussion of this subject at the last Chapter meeting. Co-operation had developed with the Chambers of Commerce in Seattle and Tacoma, and the subject had also been discussed at meetings of other organizations where on one occasion the governor had participated.

The subject of employment of private architects on federal government work was introduced by Secretary Gowen, letters being read from President Kohn of the Institute, Ferry K. Heath, Assistant Secretary of the Treasury and the Seattle Chamber of Commerce, the latter having passed a resolution favoring such employment. The secretary also announced that letters had been written on the subject to each of the other

Chapters of the Institute. Harlan Thomas followed by reading other correspondence bearing on the matter and mentioned the favorable publicity extended by the press.

Secretary Gowen read a letter from the secretary of the Institute, Mr. Baldwin, announcing a proposition to publish a history of the Institute and asking the opinion of the Chapter in regard to it. After some discussion it was voted that the Chapter, while not opposing the publishing of the history, believed that the money should at present be spent in other ways.

The president then introduced George W. Bullard, the first president of the Chapter, who responded with some interesting allusions to its early history. This was followed by the introduction of Victor Jones, new member, who responded with some words of appreciation.

The meeting was then turned over to Mr. Alden, who led up to the introduction of the speakers on the program by alluding to their valuable services in city planning, J. W. A. Bollong, as Traffic Engineer of Seattle, and E. S. Goodwin, as one who had served continuously on the Seattle Zoning Commission, the succeeding City Planning Commission, and had continued as a member of the new City Planning Commission recently created.

Mr. Bollong said that traffic control is one of the most important and serious problems facing city governments today. Traffic is nothing more than an indication of business being carried on and is daily becoming heavier in volume. The streets are one of our most valuable assets. Without streets, it would be impossible to exist. "We must make them productive," he said, "in other words, make the greatest use of the streets that are available. Some uses are more necessary than others and the best use is simply a question of segregation." It was Mr. Bollong's firm belief that the right to move a vehicle is far superior to the right of storage.

A special meeting of the Chapter was held at the College Club, Seattle, Monday noon, October 6, to consider a report of the Committee on Legislation.

Mr. Vogel, chairman of the committee, outlined the committee's proposals to effect some improvement in the Architect's License Law of the State. The report was discussed by the members present as one of progress and left with the committee for further consideration. A conditional appropriation of $150 was made for the use of the committee.

TRAVELING EXHIBIT

A traveling exhibit is going the rounds of the various architects' offices in Tacoma, consisting of sketches submitted in a recent contest sponsored by the Tacoma Draftsmen's Club under the chairmanship of Johnnie Richards of the office of Heath, Gove and Bell. The sketches were judged by a committee from the Club and the committee's comments are attached to each sketch.

Nelson Morrison was awarded first prize for a pen and ink sketch of a portion of the Tacoma tide flats. Herbert Bell was second with one of Foss' tug boats. George Gove couldn't keep out of the running and was awarded honorable mention for his "Grand Prix de Rome Esquisse-Esquisse" showing his proposed new offices in a renaissance chateau to be built on the Sound just above Dash Point.

Earl Dugan, George Ekvall, Heath, Russell and Si Nelsen also ran. Mock, Shaw and Prexy Borhek failed to submit sketches so the judges prepared a sketch entitled "Rest in Peace" to commemorate their enthusiasm.

The Tacoma architects meet every Tuesday noon at Hopkins Grill and an invitation to attend is extended to all architects visiting the city.

COMMONWEALTH CLUB

Section on Architecture, Commonwealth Club of California, resumed its monthly luncheon meetings, after the summer vacation, on October 16. Emerson Knight, landscape architect, was the speaker of the day. His subject was the National Highways of Mexico. He gave a very interesting talk on the various phases of highway development which came under his observation while serving the Mexican Federal Highway Commission in an advisory capacity.

He especially commended the Commission for its high regard for the natural beauty of the country and for its earnest endeavor to preserve the historic national types of architecture in its structures.

A general discussion of highways followed.

Mr. Evers asked if the Section might not bring up for discussion the matter of the increasing disregard for scenic beauty in our California highway work—in particular the matter of deep road cuts which are made to avoid curving roads—in many cases with but slight gain in mileage.

Mr. Evers suggested that the Section hold an open meeting on the subject and invite the maintenance engineer of the California Highway Commission and the president of the "Save the Redwoods League".

—E. E. W.

OFFICERS OF STATE ASSOCIATION

The State Association of California Architects has elected the following officers and directors for the ensuing year: Robert H. Orr, Los Angeles, president; Charles F. B. Roeth, Oakland, G. Stanley Wilson, Riverside, and Albert J. Evers, San Francisco, vice-presidents; Chester H. Miller, Oakland, secretary; L. G. Scherer, Los Angeles, assistant secretary; A. M. Edelman, Los Angeles, treasurer; William Garren, San Francisco, assistant treasurer. Members of the executive board are: Frederick H. Meyer, San Francisco; Richard C. Farrell, Alhambra; Alfred F. Priest, Los Angeles; Harris C. Allen, Oakland; Henry C. Collins, Palo Alto; John J. Donovan, Oakland; Mark T. Jorgensen, San Francisco.

The Association will hold the 1931 annual meeting in Riverside.

S. F. ARCHITECTURAL CLUB

The Club will soon be in its new quarters at 130 Kearny Street, San Francisco, where it will occupy the entire fourth floor. There will be a large club room, atelier and a special classroom.

The Atelier held its annual dinner in October. Rudy Igaz and Ed De Martini were elected Massier and Sous-Massier respectively. All except one of the analytiques and projects turned in on the last problem, received a mention. Rome Blas received a second medal on his Class A Project.

The annual jinx was held on October 18th at the Builders Exchange and was greatly enjoyed. Much credit is due to W. B. "Hollowtile" Rue for his assistance in planning this affair.

ENGINEERS GET LICENSES

Eight applicants who passed the examination July 14 have been granted certificates to practice professional engineering in Oregon by the State Board of Engineering Examiners. They are: F. D. Moss, Sr., Portland; W. A. Ross, Portland; W. W. Jones, Portland; F. E. Hobson, Newberg; F. F. Ford, Salem; George J. R. McGee, Hillsboro; F. Cushing Moore, Spokane, and J. B. Alexander, Duluth, Minn. Murray Erick of Los Angeles was granted a certificate through reciprocity with California.

ARCHITECTS ENTERTAINED

The Master Painters' and Decorators' Association of Los Angeles, entertained a number of architects at the Chamber of Commerce Building, October 23. A splendid program was carried out and the guests were welcomed by J. C. Austin, president of the Chamber of Commerce, as well as the members of the association.

SEATTLE POCHE CLUB

Seattle's Poche Club, composed of draftsmen and younger architects have a busy winter in the planning.

Beaux Arts study will be offered as an appeal to prospective members and those enrolled already who desire intensive study of architectural problems. A class in architectural office practice and state requirements will aid students, designers and draftsmen in preparing for state licenses in architecture.

Publication of a Yearbook is announced for Christmas time. The committee in charge is composed of Harry Myers, Berney Moe, Jack Turner, Lowell Casey, Paul Thiry and Frank Wynkoop.

PAINT PROBLEMS SOLVED

Elsewhere is this issue is published a brief review of a book, "How to Paint Concrete and Masonry Surfaces" recently published by the Medusa Portland Cement Company, of which Gunn, Carle & Co., Ltd., 444 Market Street, San Francisco, are the Northern California distributors. The brochure contains some exceedingly valuable information on the use of concrete paint for masonry surfaces and undoubtedly it will appeal to architects, contractors and others interested in concrete paint problems. A copy of the book will gladly be mailed on request by the Gunn, Carle Company.

CITY PLANNING CONFERENCE

The Pacific Northwest Association of Planning Commissions will hold its third annual conference at the Winthrop Hotel, Tacoma, Washington, November 14th and 15th. An attractive program has been arranged with morning, afternoon and evening sessions and addresses covering the various phases of city planning.

RADIO TALKS ON ARCHITECTURE

The Washington State College is conducting an architectural program over the radio every Wednesday evening at 7:30 o'clock, entitled the "King's Castle." The Broadcast consists of a discussion by newlyweds over a "dream house," each week contributing successive steps in its realization.

NORTHERN CALIFORNIA CHAPTER

The regular meeting of the Northern California Chapter, A. I. A., was held at the University of California in Berkeley, October 28th. Through the kindness of Warren C. Perry, it was arranged that the architects should meet at the Faculty Club where dinner was served.

Guests present included Messrs. John Dinwiddie, Stafford Jory, Michael Goodman, Chas. Claudius, Smith O'Brien, Irving Morrow and Professor Torrosian.

This being the annual meeting, the president delivered his annual report and called for the reports of other officers and committees which were submitted, as follows:

Executive Committee, James H. Mitchell, Secretary-Treasurer; Committee on Competitions, John Reid, Jr., Chairman; Fine Arts Committee, Fred Ashley, Chairman; Membership Committee, Lester Hurd, Chairman; Industrial Relations Committee, Harry W. Michelson, Chairman; Public Information Committee, Harris Allen, Chairman; Legislative Committee, Albert J. Evers, Chairman; Education and Library Committee, Warren C. Perry, Chairman.

There being no nomination in addition to the ticket presented by the Nominating Committee at the September meeting, the following were unanimously elected to office:

President, Henry H. Gutterson.

Vice President, Albert J. Evers.

Secretary-Treasurer, James H. Mitchell.

Directors for three years, Frederick H. Meyer and Birge M. Clark.

Warren C. Perry, as director of the School of Architecture, welcomed the architects and in speaking of the work being accomplished in the school, outlined the merit of establishing closer relationship between the architects and the school and the value to the students in being acquainted with the men who might be their future employers.

Adjourning to the Architecture Building, the members enjoyed meeting the students and observing them at work, and then moved on to the hall where the evening was spent in viewing the drawings on display.

In addition to the projects, sketches and order plates of the students, there was shown a splendid group of drawings of local architects made in their leisure hours, here and abroad. These were presented in various media, water-color, pencil, crayon, pen, etchings and dry-points.

Among those whose work was presented were: Warren C. Perry, E. O. Bangs, Henry H. Gutterson, W. C. Gillam, Raymond Yelland, John Dinwiddie, Irving Morrow, John Galen Howard, Wm. C. Hays and Michael Goodman.

So much enthusiasm and praise was aroused over the merit of the work that the exhibit was displayed in San Francisco for two weeks.—J. H. M.

CO-OPERATION WITH CLIENTS*

By H. Roy Kelley, A. I. A.

Proper co-operation between client and architect is founded on a basis of confidence. The architect must have his client's full confidence at the outset and should keep it right through to the end. Therein comes the difficulty in soliciting work. When a client goes to an architect it is because of his confidence in that architect. When the architect goes after the client and has to sell the client, it is usually an entirely different situation. A full measure of co-operation in such cases is rather difficult.

To keep his client's confidence the architect must keep it constantly in mind that he is being employed to give service to his client, and the house or whatever he is doing is being done for the client and not for the architect. He must not in any way give the client the impression that he is trying to enforce his own ideas on the client merely because of personal preference. In presenting such ideas or suggestions the architect must be diplomatic and make it clear that he is prompted in such suggestions by a proper consideration of the client's interests. In vetoing a request of the client, he should be decidedly diplomatic and not do it in such manner to indicate a reflection on the taste of the client in having made such a request, even though it may be an indication of poor taste on the part of the client. Nothing irritates a client more than this, and an architect who antagonizes his client in this manner ruins the basis of confidence that is all important; and co-operation then becomes very difficult.

The average client, provided he is at all reasonable and of logical mind, can usually be presented logical reasons for a different solution of a problem than the one he may at first insist upon, provided the architect is really right in his objections. Very often the architect's objections are not reasonable or logical and if the client senses this it will have a disastrous effect on the client's confidence in the architect. Very often the architect will profit by taking suggestions of his client and giving serious thought and study to them in a sincere effort to see what he can make of them. This often stimulates him to produce something more distinctive, and away from the stereotyped which is otherwise apt to result, when the architect has things too much his own way.

A great deal has been said about the so-called "scrapbook" type of client. Many architects abhor the idea of a client bringing in photographs and other forms of

*Abstract of a paper read at the annual convention of the State Association of California Architects, Del Monte, California.

(Turn to Page 121)

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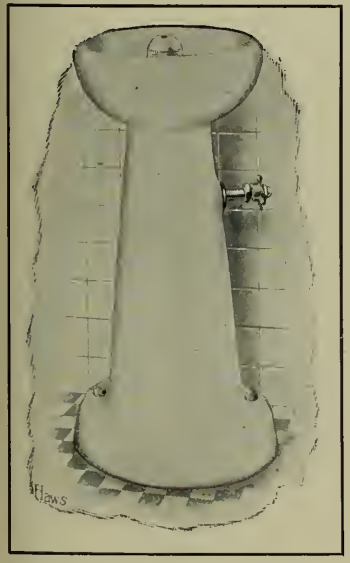

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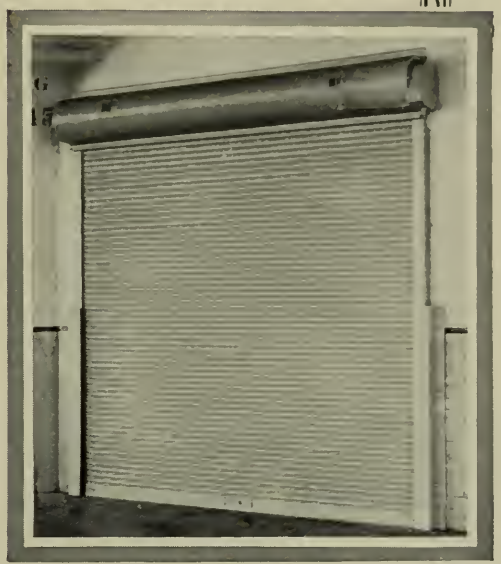
illustrations as a guide to be followed. But sometimes it is of great value for the architect to have this information as a guide and an index to the taste, appreciation, likes and dislikes of the client, and by having it he is less apt to go astray and produce a home or building that is not the proper background for the tastes and requirements of his client. Nothing can hurt the architect more than to produce a building that does not fulfill the needs, tastes or appreciation of the client. The architect should be very certain, then, at the very start to determine exactly what the client is aiming for, and he should exercise the greatest care in seeing that the client understands every detail and feature of his plans. He should never go ahead with working drawings until the client has thoroughly studied the sketches and understood every detail of arrangement. He should explain his sketches in detail and in every way help the client to interpret them; he should instruct the client to live in the house on paper, arrange the furnishings, etc. If this is done, it may result in a lot of time spent on sketches, but as a rule very few changes will be necessary in the working drawings or in the house during construction.

If the client brings to the architect illustrations or other information which show such atrocious taste as to indicate a poor type of client, it is indeed fortunate to know this at the start, as right there is a good chance for the architect to waive that particular job. It is better not to do the job at all in such a case, because it means that the architect will either have to

Superiority



If Kinnear Rolling Doors are a superior product, and it is generally conceded by those who specify, install and use equipment of this type that they are—it is simply a reflection of the ideals of their maker. Kinnear has the courage, the financial resources, and the engineering ability to maintain the standards instituted 35 years ago when the idea of a rolling steel door first was conceived. Kinnear Doors cost a trifle more, but the years always prove their worth.

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produce something that may prove decidedly harmful to him or by costly and disagreeable argument produce a makeshift which will in most cases be unsatisfactory to the client. In either case, the architect loses most decidedly. This is seldom apt to happen, however, where the client selects the architect. It is almost always apt to happen where the architect solicits the client.

At the start of every job the architect should get a complete word picture of the desires and requirements of his client. This he should use as a program to guide him. He should diplomatically discourage his clients attempting to lay out their own plans, carefully explaining to them that the architect is by experience and training better equipped to do this than is the layman. He should at least urge the client to give him a chance to do this and then if the client does not like his scheme it is still not too late to go back to the plan or ideas of the client. But he will rarely have to go back to the plan submitted by the client if he is careful to get a full understanding of the client's problem and study his scheme very diligently before presenting it. The architect should always use extreme care to record in detail all requests and requirements of the client, so as to be sure of not overlooking anything in plans and specifications. This is highly important, as it will avoid extras or difficulties often apt to weaken the confidence of the client.

The worst thing in the world an architect can do is to submit sketches in quest for a job. Nothing gets him into more trouble. From a purely practical point of view, it is harmful to the architect, even though he may get the job as a result. Usually such sketches are made without thorough knowledge or study of the client's requirements and, being a gamble, the architect cannot spend the time and thought in the study of the sketches that he would if he actually had the job. As a result, if the sketches are approved, the job usually goes ahead on a half-baked, poorly studied basic scheme which the architect later discovers to be not as fine a solution as it should have been had he actually started with a more complete understanding of his client's needs and a more thorough study during the preliminary work. In such cases co-operation is difficult. The job starts on a basis of salesmanship and this usually continues throughout, until in the very end the client in most cases ends up with something he did not

(Concluded on Page 139)

BOOK REVIEWS

By Edgar N Kierulff

THE ARCHITECTS DIRECTORY OF CALIFORNIA VOL. III. Revised September, 1930. Published by Cornell T. Malone, Chamber of Commerce Bldg., Los Angeles and 741 Pacific Bldg., San Francisco. Price $5.00.

This edition is greatly improved over the last one. All the architects in California are listed, together with separate lists for the northern and southern portions of the state. A great deal of general and carefully detailed information is contained relative to the various municipalities in the state, building ordinances and regulations for the practice of architecture. The book is pocket size.

HOW TO PAINT CONCRETE AND MASONRY SURFACES By Medusa Portland Cement Co., 1002 Engineers' Bldg., Cleveland, Ohio. A.I.A. File 25-02.

A brochure issued by the Medusa Portland Cement Company covering a subject of primary importance to the architect and owner. Deterioration of concrete and masonry walls and their preservation, is discussed and instructions for the application of a preservative paint are given. The brochure, fully illustrated, embraces seventeen short chapters on all the phases indictated by the title.

MODERN PICTURE-HOUSES AND THEATERS—By P. Norton Shand. Published by J. P. Lippincott Company, Philadelphia. Price $5.00.

An extremely interesting book on cinema houses in America and abroad. The pictures, clear and judiciously selected, serve to illustrate some of the more modern cinema theaters in the country. The chapters of text take up in sequence such considerations as: The Modern Theater; The Social Function of the Cinema; The Cinema Considered as a Building. There are chapters also on facades, foyers and plans and sections.

A PRACTICAL TREATISE ON MAPPING AND LETTERING (Including the Construction of the Basic Alphabets and the Elements of Map Design)—By Malcom Lloyd. Published by P. Blakiston's Sons & Co., Philadelphia. Price $2.50.

An excellent book for reference in the drafting room and of particular interest to student draftsmen and engineers. The section on mapping is most enlightening and being well illustrated, adds double value to a clear and concise text. The section on alphabets is similar to that of other text books and requires no special mention. From the reviewer's standpoint, it is the mapping section of this book that carries the appeal.

THE CHINA ARCHITECTS AND BUILDERS COMPENDIUM. Edited by J. T. W. Brooks, A. R. I. B. A. and R. W. Davis. Price $5 mex.

A handbook of general reference and information for the China coast cities. It contains much valuable information relative to estimated building costs, regulations and laws, a list of architects and construction firms and dealers in building products. It is well illustrated. Address: North China Daily News & Herald, Ltd., Shanghai, China.

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This subject of electrical wiring is much more important than its small cost would indicate. Actually, the successful and convenient use of a modern building depends upon how well it is done. Circuits that occasionally give trouble may deprive tenants of lighting, of power for their essential business machinery, of communication, of ventilation or of the free use of elevators. Skimping on the quality of electrical wires is a sure way to invite dissatisfaction from tenants.

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CITY NOISE ABATEMENT

The noise abatement commission of the Department of Health, City of New York, appointed by the Commissioner of Health, Shirley W. Wynne, in October, 1929, has been studying city noise in order to discover means of abating it. Its first report after eight months of investigation and work is now presented in printed form to the citizens of New York. The report of the commission is edited by Edward F. Brown, director, and three associates. It makes a book of 308 pages, written in a clear, popular style, well printed, and illustrated with photographs, charts, and tables where they are important to amplify the statements of fact. The end-papers of the volume carry in pictorial form a conception of the sources of city noise.

The noise abatement commission consists of nineteen members, including the chief city magistrate, the police commissioner, the sanitary commissioner, and the health commissioner. Each member is a specialist in his field. An impressive feature of the report is the co-operation which has been extended to the commission by dozens of organizations and corporations, and almost hundreds of individuals who have aided by scientific tests, by financial support, by advice, and in many other ways. This report probably will stand as a record of unusual civic co-operation.

The next impression which is gained by the reader of this noise abatement report is the wide extent of the ramifications of the noise problem. As Dr. Wynne says in his Foreword, "It is the result of serious study and work in medicine, neurology, otology, law, law administration, acoustics, engineering construction, and the automotive industries." The object of the study in these many fields is to make New York a peaceful and healthful place in which to live.

In this report one may read of the actual accomplishments already achieved by the commission as well as descriptions of the research and investigations undertaken, and, finally, proposals for further abatement of noises. "As the first noise abatement commission ever appointed in the United States, and probably the first official body of its kind ever to undertake a thorough scientific analysis of the noise problem anywhere," its studies and reports are of importance to many municipalities. Dr. Wynne says: "The commission now shares with the six million dwellers of New York City the pioneering task of removing unnecessary noise from city life and to that end, shares also its knowledge of conditions and its suggestions for remedies."

WOODEN TRUSS PASSES TEST

A 75-foot wooden bowstring truss built according to the design of the Summerbell Company has passed the tests of the New York Building Department. A contractor found himself suddenly confronted with the necessity of having a test made by the department. A permit had been duly applied for but the con-

tractor was not aware that an official test was necessary until after the trusses had been almost completely assembled. This eliminated the possibility of any special preparation for the ordeal.

The particular truss taken for the test had a span of 75 feet on a spacing of 20 feet. It was to support a live load twice as great as the nominal requirement of 40 pounds to the square foot, making the total load 120,000 pounds. In addition the truss carried a dead load of 10 pounds to the square foot, which brought the entire load up to 135,000 pounds. The live load consisted of 960 bags of sand.

After the truss had carried the load for 24 hours, measurements were made of the deflections; the maximum being five and three-eights inches or about 1-170th of the span. The lumber, Douglas fir, was found to be in perfect condition even though the test load was twice the prescribed load. Engineers commented that the test proved that a properly designed bowstring truss of wood will carry at least as large a load as steel trusses of similar design. Approval of the trusses was promptly granted by the building department.

INSULATION OF HOMES

The Flax-li-num Insulating Company is recognized as a pioneer in the field of thermal insulation. For more than twenty years it has been contributing liberally to the development and perfection of insulating material and insulation methods.

Originally designed for refrigerator and refrigerator car use, Flax-li-num quickly outgrew this field and attention was turned to the insulation of homes. Flax-li-num Insulating Company was first to develop insulation along scientific lines. Its "two-air-space" principle of application is accepted by architects and heating engineers as one of the fundamentals of correct insulation.

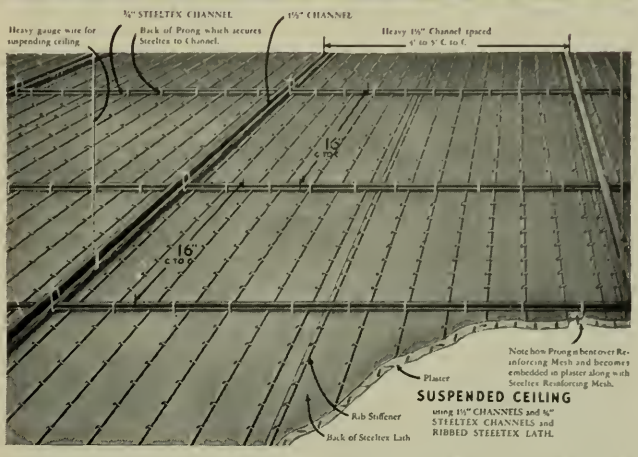
Today Flax-li-num enjoys a nation-wide acceptance. From the small beginning some twenty years ago, the plant has grown until it now covers more than twenty acres. It has branches in 36 of the prominent cities of the country.

Just recently the company developed a new product, Bi-Flax, which has brought to the building trade an entirely new type of insulating plaster base. Bi-Flax is a combination of Flax-li-num insulation, building paper and expanded metal lath. For the first time, it enables the builder to handle metal lath and insulation as one unit. It is claimed that Bi-Flax provides efficient protection from heat and cold, and at the same time furnishes a permanent, ideal plaster base, affording opportunity for finer plastering and more beautiful finishes.

STORE ALTERATIONS

Guy L. Brown, architect of Oakland, has completed plans for altering a store into offices at 1727 Franklin Street, Oakland, for the Fred T. Wood Company.

STEELTEX
SUSPENDED CEILINGS


¾" STEELTEX CHANNEL
1½" CHANNEL
Heavy gauge wire for suspending ceiling.
Back of Prong which secures Steeltex to Channel.
Heavy 1½" Channel spaced 4' to 5' C. to C.
15" c to c
16" c to c
Note how Prongs are bent over Reinforcing Mesh and becomes embedded in plaster along with Steeltex Reinforcing Mesh.
Plaster
SUSPENDED CEILING
using 1½" CHANNELS and ¾" STEELTEX CHANNELS and RIBBED STEELTEX LATH.
Rib Stiffener
Back of Steeltex Lath

Above: A view looking down on STEELTEX SUSPENDED CEILING construction. The Rib Stiffeners (as shown) give board-like rigidity to Ribbed STEELTEX lath,—are part of Ribbed STEELTEX lath and run lengthwise across the back of every sheet. The galvanized wire fabric on the plaster side of Ribbed STEELTEX lath becomes embedded in the plaster slab as illustrated.

Plastering STEELTEX SUSPENDED CEILING, State Armory, Erie, Pa. Joseph F. Kuntz, Architect, Pittsburgh, Pa. Lee Stearns, Plastering Contractor, Erie, Pa.

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Above: A sheet of Ribbed STEELTEX lath (plaster side showing galvanized reinforcing mesh). The Rib stiffeners run across the back of Ribbed STEELTEX lath and give every sheet its board-like rigidity during plastering.

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THE LATEST IN INVENTIONS

Editor's Note: This Department by Ray Belmont Whitman, Patent Attorney of New York City, is intended to inform the reader of the latest patented inventions each month in the field of THE ARCHITECT AND ENGINEER. The Patent Editor offers to the readers of ARCHITECT AND ENGINEER personal advice, without obligation, on any subject connected with Patents, Trade Marks, Designs and Copyrights. All inquiries should be addressed to "Patent Editor" in care of this magazine.

THE COST OF A PATENT

The cost of preparing and filing a patent application on a simple invention involving not more than one sheet of drawings, should be in the neighborhood of $125, but it may be more or less depending upon the skill and reputation of the attorney. This amount includes the government filing fee of $20, the draftsman's charge for the drawing, and the fees and other expenses of the attorney. More complicated cases are, of course, correspondingly more expensive. And where the attorney has to leave his office, as to inspect a machine in some shop, he of course must charge you extra for his time and traveling expenses.

The attorney's charge for each amendment, while the case is being "prosecuted" or contested with the Patent Office, before allowance, is often about $25, where there are no unusual complications. Sometimes only one amendment is necessary in order to get all the protection to which the inventor is entitled. More frequently, however, two or three amendments are made, and in very important cases, especially if the

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invention is at all technical, five or six, or even more, may really be necessary. It all depends upon the state of the prior art, the thoroughness with which the invention has been claimed in the application, and the skill and aggressiveness of the attorney who prosecutes it.

This is the hardest part of the work, and requires the greatest skill. *Also, it is usually the part that is badly neglected, and responsible for the greatest loss of rights to the inventor.* Therefore, you should here cooperate with your attorney in every way, and provide him with sufficient funds to do the work properly.

The definite amounts stated above as being the usual cost of a patent, are merely representative, and to help the inventor gauge in a general way whether he is paying too little or too much. And of the two, shun the first as you would the plague. Nowhere is the old adage, "You can't get something for nothing," more true than in patent service. Trying to save a few dollars here may mean a loss of thousands later on, through your patent being worthless. The skill of an attorney is as vital to an inventor's success, as a doctor's skill in a serious illness may be to his life.

Questions and Answers

Q. 1. When should a design patent be taken out and when should a mechanical or ordinary patent be taken out. In other words, what is the difference between these two kinds of patents?

A. B. S., Seattle, Wash.

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A. 1 A design patent is directed to an invention in which the form or appearance of the invention is important from an aesthetic or ornamental view point whereas a mechanical or ordinary type of patent is directed to the function of the invention. Whenever possible take out a mechanical patent for it is less easily avoided without infringement and therefore gives much better protection, and better prevents competition. A design patent may often be avoided by more or less simple changes in the appearance of the design without affecting the value of the new appearance.

Q. 2. Will the Patent Office issue a patent on the same thing to more than one inventor?
"Inventor", Los Angeles.

A. 2 No. The Patent Office can only issue a patent to the first inventor, although it sometimes happens that later inventors also get patents on somewhat similar things which may be modifications of or improvements over something previously patented. It is necessary for a patentee before utilizing his invention to determine by an infringement search whether there is any such other patents previously issued on part of his invention and which he would have to use in order to also use his own invention; for in that case he might infringe the claims of such prior patents and be stopped from the use of his own patent as a result.

Q. 3. Is it possible for a poor man to make money out of a patent? John Nash, New York City.

A. 3. It certainly is, some of the greatest fortunes have been built up by men who were originally poor and who made valuable inventions and obtained strong patents on them. Large corporations fear to be drawn into infringement suits over patents and will do all they can to avoid infringing. Where, however, there is an infringement and the owner of the patent has no funds to sue the infringer, he can often make an arrangement with the Patent Attorney to conduct the litigation on a contingent fee basis.

Q. 4. What countries grant the strongest patents?
"Professor", Berkeley, Cal.

A. 4. The United States and Germany, since both these countries make rigid priority searches and the patents are therefore in a sense semi-adjudicated when issued. Canada, Great Britain, France and most of the other countries grant patents which are largely in the nature of registrations because the searches are not so thorough.

CONTRACTORS FILE OBJECTIONS

Herewith are additional objections to those published last month, submitted to the Joint Legislation Committee on Street Improvement Laws, by the California Branch of the Associated General Contractors of America:

"It has been proposed that a provision be inserted in the improvement acts limiting the width of the pavement which can be constructed in front of private property and assessments made against it by special assessment procedure. We believe that any attempt to establish a set standard width of this character would be decidedly impractical. The subject is one entirely of policy and administration and should be left to the public officials to determine. The width of streets varies so much that such a limitation would work much practical hardship on property owners endeavoring to have streets in front of their property improved. We might point out that many of the older communities in California were laid out with very wide streets, even in the residential district, and a narrow strip of pavement down the center of the street in such cases would be of but small benefit to the abutting property. While we are not very largely concerned with the question of the contribution of general fund moneys to take care of additional width of streets, yet we feel that the principle involved is unsound and will harm legitimate improvement.

"It has been suggested by various agencies that provision be made for the payment of contractors on public work in cash from a revolving fund, or other cash moneys, instead of by giving them an assessment or bonds. In principle we have no objection to this proposal, but do not feel that any measure can be worked out which will be practical in accomplishing the results desired. We do not think it will enable the responsible contractor to finance himself any cheaper or do the work for less. As the law stands now, the property owner gets all of the work completed before he is called upon to pay. We also have no objection to the suggestion that the legislative body be empowered to increase its cash contribution, as originally proposed, provided some legal provision can be worked out which will accomplish this result.

"It has been suggested that all of the improvement acts be amended to limit the compensation of engineers, attorneys and others to a maximum of 7 per cent. We are in accord with the idea back of this suggestion, but we doubt the practicability of including such provisions in state law. We would like to point out that over the many years past, in the history of street improvement work under special assessment procedure, the laws have been as they are now in respect to leaving the matter of fixing the compensation of the engineer in the discretion of the council. We think that this is the only practical way to approach the matter, for the reason that different classes of work justify different fees and oftentimes the size

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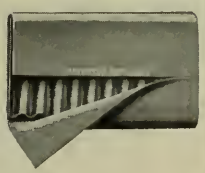

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See "SWEETS" Catalogue

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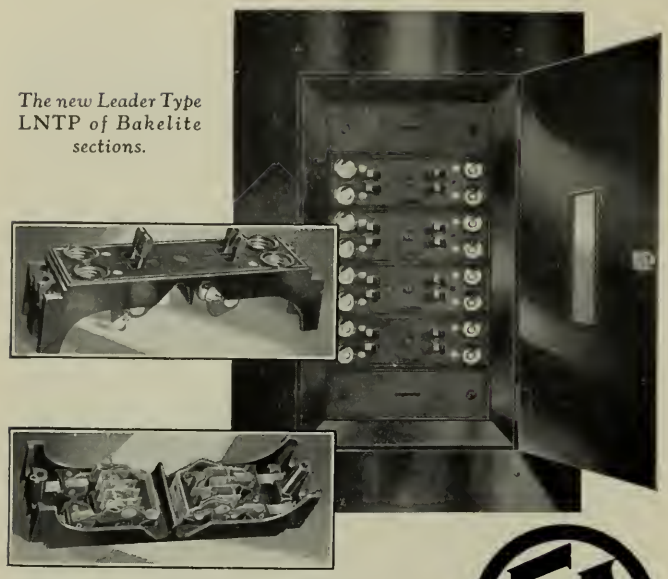

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244 North 10th St.
Pittsburgh, Pa.
B. Frank Perry, Inc.
319 Third Ave.
St. Louis, Mo.
O. H. Rottman,
3650 Windsor Place
San Francisco, Calif.
Lee Van Atta,
340 Fremont St.
Seattle, Wash.
Electric Engineering Sales Company,
2914 First Ave., S.
Tulsa, Okla.
P. E. Ebersole,
214 S. Victor St.
Toronto, Can.
Amalgamated Elec. Co., Ltd.
Gen. Sales Office,
370 Pape Ave.
Vancouver, Can.
Amalgamated Elec. Co., Ltd.
Granville Island
Winnipeg, Man., Can.
Amalgamated Elec. Co., Ltd.
677 Notre Dame Ave.
Hamilton, Ont.
Amalgamated Elec. Co., Ltd.
18 Mary St.
Montreal, Can.
Amalgamated Elec. Co., Ltd.
1006 Mountain St.

of the job has a direct bearing on the cost of the engineering work. A 7 per cent fee may not be adequate on a $10,000 job, but may in some instances be higher than necessary on a $300,000 job. Good technical services are very essential and are worth the price even if it is high.

"We have heard it suggested that cities be required to utilize some of the state engineering force in instances where the municipality is too small to have an engineer of its own. We think this would be unwise for many reasons. In the first place it would be different to get the proper attention to such matters from the state engineers and again it would be necessary to in some way compensate the state for the cost of this service. This would be difficult to work out and we believe that the state itself would be strongly against such a proposal.

"This organization has been very emphatic in its opposition to the principle of alternative bidding—most especially so in connection with special assessment work. We believe that the principle is economically and legally unsound. Many people have the erroneous opinion that the contractors are opposed to alternative bidding because it increases competition, but such is clearly not the fact, for the individual members of the contracting industry find a free and open competition just as necessary to their business as it is essential to the property owners. If alternative bidding would increase competition we, as an organization, would be for it. Alternative specifications are costly, furnish an additional basis for friction between property owners and public officers, provide an ever-present opportunity for the charge of corruption in public office, and have never resulted in any reduction in price.

"Alternative specification greatly increases the cost of special assessment work in that it requires additional surveys and engineering work, additional specifications, additional proceedings and additional hearings. It will increase the contractor's cost of bidding on public work by forcing him to bid on many jobs which will be ultimately awarded for a type of work which he is not equipped to handle. This increased cost of bidding becomes a part of the contractor's overhead and must eventually be paid by the property owner. Possibly one of the most obnoxious results which alternative specifications will produce is the condition which will produce several low bidders on a given job. The opportunity for favoritism and undue influence is too apparent to require discussion."

CORRUGATED TRANSITE

Johns-Manville Corporation have just published a new brochure (A.I.A. File No. 15-F2) describing their corrugated transite—an asbestos-cement mixture formed under high pressure which is used for roofing, siding and partition material on skeleton frame industrial structures.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—
Common, $29 to $35 per 1000 laid, (according to class of work).
Face, $70 to $95 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $.95 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.85 sq. ft.
Common, f.o.b. cars, $12.00 plus cartage.
Face, f.o.b. cars, $45.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 94.00 per M
4x12x12 in.	106.00 per M
6x12x12 in.	154.00 per M
8x12x12 in.	235.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$108.00
6x12x5½	74.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.
Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.
Terazzo Steps—$1.50 per lin. ft.
Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Eliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
Eliott top gravel, at bnkrs.	1.40 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) $2.64 per bbl.
Cement (f.o.b. Job, Oak.), $2.64 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Atlas "White" .....$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4½-inch concrete basement floor.....14c to 15c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps.....$1.26 per lin. ft.

Dampproofing—
Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $5.50 per square.
Hot coating work, $2.00 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).
Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—
Sand, 50 cents; clay or shale, $1.00 per yard.
Teams, $10.00 per day.
Trucks, $21 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—
Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 80c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c per square foot.
Note—Add extra for setting.

Heating—
Average, $1.70 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, $23.00 per M (average).
Common O. P. select, average, $30.00 per M.

1 x 6 No. 3—Form lumber	$19.00 per M
1 x 4 No. 1 flooring	42.00 per M
1 x 4 No. 2 flooring	39.00 per M
1 x 4 No. 3 flooring	35.00 per M
1 x 6 No. 2 and better flooring	39.00 per M
1¼x4 and 6 No. 2 flooring	48.00 per M

Slash grain—

1 x 4 No. 2 flooring	$34.00 per M
1 x 4 No. 3 flooring	32.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	4.00 per m

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$135.00 M ft.
1 1-16x2¼" T & G Maple	145.50 M ft.
⅞x3½ sq. edge Maple	132.50 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq. Ed.
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	

Laying & Finishing 16c ft. 15c ft. 13c ft.
Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.40
3 ply per 1000 ft. roll	8.00
Sash cord com. No. 7	$ 1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.25 base.
Belgian nails, $3.00 base.

Millwork—
O. P. $80.00 per 1000. R. W., $80.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.00 and up, each.
Doors, including trim (single panel, 1¾ in. Ore. pine) $6.75 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 20c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $5.50 each.
Dining room cases, $6.50 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.
For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

Tennessee ..... 1.70 sq. ft.
Verde Antique ..... 3.00 sq. ft.

NOTE—Above quotations are for ⅞ inch wainscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique .....$2.50 sq. ft.
Tennessee ..... 1.50 sq. ft.
Alaska ..... 1.35 sq. ft.
Columbia ..... 1.45 sq. ft.
Yule Colorado ..... 1.45 sq. ft.
Travertine ..... 1.60 sq. ft.

Painting—

Two-coat work .....30c per yard
Three-coat work .....40c per yard
Whitewashing ..... 4c per yard
Cold Water Painting ..... 8c per yard
Turpentine, 78c per gal. in cans and 63c per gal. in drums.
Raw Linseed Oil—$ .90 gal. in bbls.
Boiled Linseed Oil—$ .93 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs)

Per. Lb.
1 ton lots, 100 lbs. net weight 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots 13c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots.....13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 13¾c
500 lb. and less than 1 ton lots....14c
Less than 500 lb. lots.....14¼c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch.....$1.00 lineal foot
8-inch..... 1.50 lineal foot
10-inch..... 1.85 lineal foot
12-inch..... 2.10 lineal foot

Pipe Casings — 12″ long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

Yard
1 coat, brown mortar only, wood lath..$0.40
2 coats, lime mortar hard finish, wood lath ..... .52
2 coats, hard wall plaster, wood lath— .55
3 coats, metal lath and plaster 1.00
Keene cement on metal lath 1.25
Ceilings with ¾ hot roll channels metal lath ..... .67
Ceilings with ¾ hot roll channels metal lath plastered..... 1.40
Shingle partition ¾ channel lath 1 side .62
Single partition ¾ channel lath 2 sides 2 inches thick..... 2.20
4-inch double partition ¾ channel lath 2 sides..... 1.30
4-inch double partition ¾ channel lath 2 sides plastered..... 2.45

Plastering—Exterior—

Yard
2 coats cement finish, brick or concrete wall $1.00
2 coats Atlas cement, brick or concrete wall 1.25
3 coats cement finish No. 18 gauge wire mesh 1.75
3 coats Atlas finish No. 18 gauge wire mesh 2.05
Wood lath, $4.50 per 1000.
2.5-lb. metal lath (dipped) ..... .18
2.5-lb. metal lath (galvanized) ..... .21
3.4-lb. metal lath (dipped) ..... .23
3.4-lb. metal lath (galvanized) ..... .27
¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, $13.85 (rebate 10c sack).
Dealer's commission, $1.00 off above quotations.
Hydrate Lime, $19.50 ton.
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—
From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $5.25 per square for 30 squares or over.
Less than 30 squares, $5.50 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—
Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, $1.25 sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Stone—
Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Steel Structural—$82 per ton (erected). This quotation is an average for comparatively small quantities
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $76.00 per ton.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of the Architect and Engineer, published monthly at San Francisco, Calif., for October 1, 1930.

Before me, a notary public in and for the state and county aforesaid, personally appeared W. J. L. Kierulff, who, having been duly sworn according to law, deposes and says that he is the Business Manager of The Architect and Engineer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (if daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, The Architect and Engineer, Inc., 1662 Russ Bldg., San Francisco, Calif.
Editor, F. W. Jones, 1662 Russ Bldg., San Francisco, Calif.
Managing Editor—None.
Business Manager, W. J. L. Kierulff, 1662 Russ Bldg., San Francisco, Calif.

2. That the owner is: (If the publication is owned by an individual his name and address, or if owned by more than one individual the name and address of each, should be given below; if the publication is owned by a corporation the name of the corporation and the names and addresses of the stockholders owning or holding one per cent or more of the total amount of stock should be given.)
W. J. L. Kierulff, 1662 Russ Bldg., San Francisco.
F. W. Jones, 1662 Russ Bldg., San Francisco, Calif.
L. B. Penhorwood, 1662 Russ Bldg., San Francisco, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation, for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

W. J. L. KIERULFF, President.

Sworn to and subscribed before me this 1st day of October, 1930.

(Seal) NETTIE HAMILTON.

(My commission expires Feb. 15, 1933.)

WOMEN SMOKERS FIRE MENACE

(From the California State Department of Industrial Relations Report to Governor's Council)

"Can they smoke like gentlemen?" They can, but they don't always do so! No mere man would be brave enough to open up a subject like this, considered from the accident-preventing side. When Frances Perkins, Industrial Commissioner of the State of New York, gave her views in a recent number of The New Republic under the title quoted above, there was aroused a country-wide interest in which men have ventured to participate. Miss Perkins took for her lead the rule invoked by President Nielson of Smith College restricting smoking to two fireproof rooms, following a number of dormintory fires due to cigarettes in waste baskets or matches flung at muslin curtains. He closed his necessary but bound-to-be unpopular address with this amiable comment: "The trouble is, my dear young ladies, you do not smoke like gentlemen."

The article expresses the belief that many women feel that their right to smoke is a bit precarious, but no comfort is found for these ladies who smoke vigorously from soup to nuts in a way "to horrify the epicure and astonish the masculine contingent which enjoys its food". Signs forbidding smoking are not observed, says Miss Perkins, and she adds: "I should have held my peace, had not this unfortunate habit of smoking in unsuitable places and under unsuitable circumstances recently pervaded the shops and department stores of most of our large and small cities in the east". This is said to create a serious fire hazard and a menace to life. Inflammable goods, and the presence of customers, are additional reasons why fire departments, labor commissions, underwriters and experts are expressing concern about the situation. It is impossible to have fire drills. Stores are apt to have insufficient exits. In the State of New York all mercantile structures erected since 1924 must have good exit facilities, but many buildings do not come within this provision of the law, and sprinkler protection may be missing.

"Ash trays and cigarettes are often placed at hand by managers of department stores," says Miss Perkins, and she thinks this is thoughtlessness. Here is a sentence that paints the picture: "But the lady whom I saw leaning on one elbow at a lace counter the other day, puffing a cigarette while purchasing yards of tulle frills, was a symbol of what the unchastened woman can do when she has not been taught to smoke like a gentleman".

The sterner sex will take pride in this: "Walk into any haberdashery or men's clothing shop and you will not see men smoking; nor do you see them smoking in hardware stores, florist shops, or other places they patronize."

Seven awnings were burned off a building in Dayton, Ohio, last summer. District Fire Chief William

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Ric-WiL Vitrified Tile Base Drain, installed immediately under the Conduit, carries off outside moisture instantly, an arrangement virtually impossible with round drain. It also serves as a cradle for the Conduit, actually adding 40 per cent to the ground load Conduit will carry, as tests have shown. Also, it carries the entire weight of pipe supports and pipes and holds the pipes and Conduit in perfect alignment. It is strong enough to stand up indefinitely and its drainage capacity is far greater than that of ordinary drain tile.

Completed installation of Ric-WiL Type F Conduit. Note Loc-liP Side Joint and ample drainage immediately under Conduit.

After trench is dug and graded, smooth bottom with sand, stake center line and set Base Drain in place—like laying dominoes.

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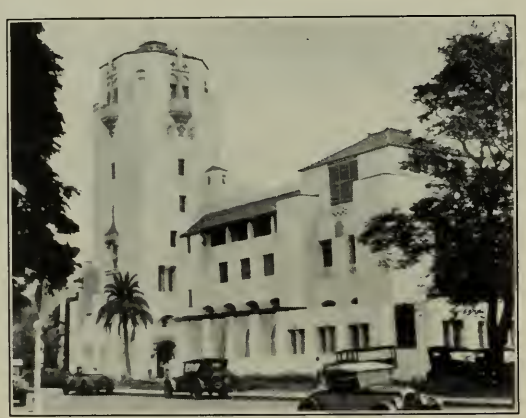

Honolulu City Hall

HAWAII, too, chooses Soulé Steel Windows for her finer public, office, industrial, and residential buildings. Soulé Steel Doors and Windows, built in Pacific Coast factories close to your job, are delivered promptly.

SOULÉ STEEL COMPANY

San Francisco : Los Angeles : Portland

H. Carver finally traced the fires to a stenographer, "who happened to be a female", to quote the Chief's words. "She denied, at first, that she smoked, but a little detective work resulted in showing her that she was mistaken, and her habit was to flip butts out of an open window."

There is a really serious side. The extension of the smoking habit is going to lead to more fires. It should be plain that danger needs to be avoided and that human life is worthy of protection.

OIL MEN FORMING COMPANY

A new company to handle equipment for the burning of natural gas for power and heating has just been organized with headquarters at 433 California Street, San Francisco. The company is called "Power and Heating Utilities of California." Its operations are in charge of James D. Spear, for a number of years in the San Francisco sales department of the Ray Burner Company, and E. W. Winter, formerly factory representative of the same company. Both men are familiar with power and heating equipment and have entered the new field because the advent of natural gas in California points to a considerable expansion in the use of the new fuel.

The new company is exclusive California distributors for the Schwan power type gas burner, and the Raymond Duo-Stat, a device that controls radiator temperature and consumption of fuel according to fluctuations in outside temperature.

BIG COMPANIES MERGE

The Genfire Steel Company and Truscon Steel Company have merged their interests and the two companies will hereafter operate under the name of the Truscon Steel Company. The same personnel that has been calling on architects, contractors and dealers, will continue to function, a new department having been created to be known as the Commodity Dealer Department. A. A. Fraser, formerly branch manager of the Genfire Steel Company with headquarters in San Francisco, will have entire charge of the department, which will handle the commodity products of the combined companies. New offices will be established in the Call Building, 74 New Montgomery Street, where the Truscon offices are now located.

TWO NEW PRODUCTS

Announcements have been made of two new products which the Master Builders Company have added to their line. One is "Brikiron", an admixture for masonry which minimizes efflorescence, waterproofs the joint, protects mortar colors from fading and prevents cracking and general disintegration of the mortar joint.

Colored Metalicron is a material which when mixed with cement and trowelled into freshly floated cement finish, colors, slip-proofs and waterproofs the floor.

CO-OPERATION WITH CLIENTS

[Continued from Page 127]

want, which has cost him a lot more than he intended to spend.

Proper co-operation with the client means giving the client honest information as to the probable building cost in the very first conference. If the client is ignorant of building costs or erroneously informed, he should be enlightened on this point.

Proper co-operation with the client means more than merely producing plans and specifications for the client. Whether or not the client has the breadth of knowledge to realize it, what he is really anxious to obtain is a thoroughly successful completed building. It is difficult for the architect to obtain this result unless he renders a complete architectural service, including supervision of construction. Therefore, it is inadvisable for the architect to accept a commission that does not include supervision of construction.

The client pays the architect for complete unbiased service. If it is necessary for the architect to call upon others for part of this service he should pay for it. He should never obligate himself to material dealers or subcontractors for structural or mechanical layouts or for any other type of consulting service at the expense of those who render it.

OAK PLANK FLOORS

ARCHITECT AND ENGINEER readers are advised that the E. L. Bruce Company of Memphis, Tennessee has available a very beautiful portfolio of "Plank Floor" installations.

"Plank Floors as Crafted by Bruce" is the most complete treatise of the subject yet compiled. The booklet is A. I. A. file size. Detailed information in regard to the use of this popular new type of hardwood floors is given. The Bruce Company will be pleased to mail a copy of the brochure upon request.

PAINTING CONTRACTS AWARDED

D. Zelinsky & Sons, Inc., 165 Grove Street, San Francisco, have been awarded the contract by the Clinton Construction Company, for the painting of the entire Ford plant at Richmond, California. This firm has also been awarded the contract by J. E. Sculley, Phelan Building, San Francisco, for the painting and decorating of St. Brigids church, Van Ness Avenue and Broadway, San Francisco, H. A. Minton, architect.

STUCCO COMPANY MOVES

California Stucco Company, formerly located at 340 Dore Street, San Francisco, has moved to larger quarters at 1001 Brannan Street. The new plant, comprising warehouses, display rooms, offices and manufacturing units, has been equipped with the latest type of machinery enabling the company to handle any size contract and give prompt delivery.

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"BEAUTY WITHOUT INTERRUPTION"
COMPLETELY invisible when the door is closed. Flush doors - clean lines - no undesirable projections.
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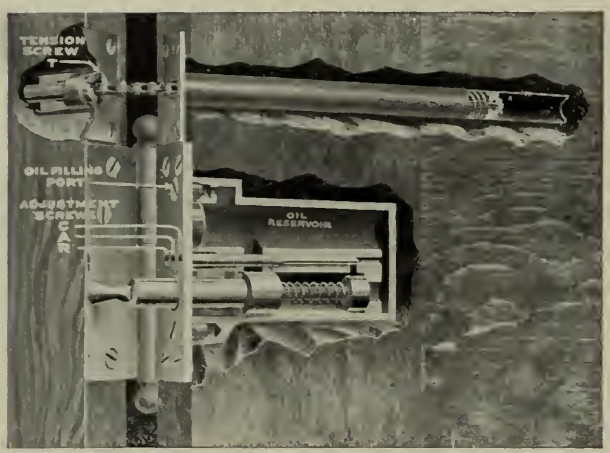

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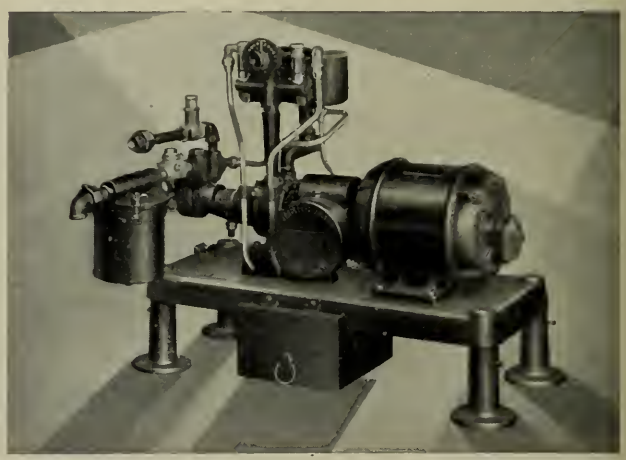

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Who's Who in this Issue

MILLER & WARNECKE, architects of the Tudor Hall Apartment Building, illustrated in this issue, have been practicing in Oakland and the Bay district since 1919. Some of the recent buildings designed by the firm are the Women's City Club and Hill Castle Apartments, Oakland, the Mrs. Chester Williams residence in Piedmont and the East Oakland High School. The last named building was awarded Grand Prize in the recent Common Brick Competition. **Chester H. Miller** was licensed to practice architecture in 1913. He is a member of the American Institute of Architects, the Society of Architects of Alameda County and the State Association of California Architects, being Secretary of the latter organization. **Carl I. Warnecke** received his early training in the offices of Bakewell & Brown and the Atelier of Arthur Brown, Jr. Mr. Warnecke later studied in the Ecole des Beaux Arts, Paris.

ALBERT H. LARSEN, whose recent hotel and apartment work appears in this issue, has been practicing architecture in San Francisco for the past five years. He is a native of Santa Barbara, California. He received his architectural training under the patronage of Geo. W. Kelham and John Bauer in the Atelier of the San Francisco Architectural Club. Prior to practicing for himself, Mr. Larsen was engaged in the offices of Miller and Pflueger, Weeks and Day, John Reid, Jr., and the late Sylvain Schnaittacher. Mr. Larsen specializes in the design of the finer type of apartment hotel buildings and theaters.

MYRON HUNT of Myron Hunt and H. C. Chambers, was born in Sunderland, Mass., Feb. 27, 1868. He was educated at Lake View High School, Chicago, Northwestern University from 1888-1890; Massachusetts Institute of Technology from 1891-1893, and had time for European study in 1893-1894. He started his professional career in Chicago 1897, and in Los Angeles in 1903. Mr. Hunt was Assistant Field Representative, Emergency Fleet Corporation, during the war; he is a former President, Southern California Chapter, American Institute of Architects; First Vice-President Allied Architects Association; former member of California State Board of Architects (Examining License Board); First Vice-President Board of Trustees, Polytechnic Elementary School. His club affiliations include the University Club, Los Angeles, Pasadena, Santa Barbara; former directors member, University Club, Chicago; California Club, Los Angeles; Flintridge and San Gabriel Golf Clubs; Overland and Valley Hunt Clubs, Pasadena; B. P. O. E., Pasadena; Bohemian Club, San Francisco; membership in Learned Societies; Fellow, American Institute of Architects. Fraternity: Sigma Chi. Mr. Hunt's original building operations were largely confined to residences. Among prominent residences erected are the following: Santa Barbara—William H. Alley; Major H. H. Peshine. Los Angeles—Mrs. E. M. Neustadt; Russell Taylor; Jesse L. Lasky. Pasadena—E. M. Taylor; E. F. Robbins; Wm. G. Mather; J. N. Burnes; E. M. Fowler; Dr. Raymond Mixsell; John P. Wilson. The H. E. Huntington residence was designed by the firm of Myron Hunt and Elmer Gray in 1908, and since that time Mr. Hunt has completed for Mr. Huntington the famous Huntington Library, which carries the treasures of the Huntington Foundation collection. The group planning of three California colleges was made by Mr. Hunt, and with Mr. Chambers the firm designed the new Pasadena Municipal Library and other notable structures.

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NUMBER 3

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DECEMBER
1930

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Photo by Mott Studios

EL GRECO APARTMENTS, WESTWOOD VILLAGE, LOS ANGELES

PIERPONT AND WALTER S. DAVIS, ARCHITECTS

THE
ARCHITECT
AND ENGINEER

DECEMBER 1930
VOLUME 103
NUMBER THREE

TODAY'S APARTMENTS

by JULIAN C. MESIC

THE range and successes of today's apartments are great, and so varied that more than a sketch is impossible here. The hope is to draw deeper thought to the problem and clarify where possible.

Apartment design and construction has long suffered from its seeming simplicity. Appearing as the mere assembling of units for habitation, many owners were blind to the economic losses occasioned by commonplace building. Architects who vision better things find this lowered standard a menace.

The great demand of the past few years for apartments, complicated the problem by making the field attractive to speculators. Charges for organization and finance proved the unguarded door through which came a staggering burden to be added to the heavier construction and equipment costs.

Investments must and will go on, but the trend is to larger units more thoroughly studied. Leading financial houses are protecting their positions by private investigation, the employment of consultants, and insisting on a better product. They realize the importance of owner, financier, builder and manager experience, comprehensively coordinated by the architect from the beginning. However, the records show that less than 20% of our apartment houses are designed by architects.

We also find a very definite line of demarkation between thoughtfully planned projects and the mass of ill considered buildings in indifferent locations. Thoughtless building tends to discredit the whole field and discourage those who do not clearly discern the underlying causes sufficiently to avoid difficulty. It takes Stuart Chase to point out "the Tragedy of Waste."

The architectural press has been alert to the problems involved. An impressive number of articles dealing with various phases have appeared during the last ten years. It is interesting to note that about five years elapses before the same facts become news. For instance "cooperatives", "suburbans", and "efficiency" apartments are heralded as new. A more accurate statement would be that they are still progressing and the field offers opportunity.

This should make architects realize the need of protecting the profits of their vanguard position. General progress is originating through their studies, but it takes so long for general acceptance that the source of the brain child is forgotten and becomes unknown to the layman.

Architectural publications serve to unite practitioners and afford a unity of purpose. If they acquaint the public with the work of individuals they also elucidate the gen-

eral practice and purpose of architects. The preparation of work for publication involves considerable expense and effort but it is only in this way that North, East, South and West may act in the common cause and help each other. There is a decided trend to use material to illustrate a point or issue rather than to illustrate a particular practitioner's work. This is particularly true of apartments which tend to become typical solutions of problems.

To accurately sift the facts and to courageously and charmingly interpret the times is an undertaking worthy the effort of our best architectural talent. The public *is* demanding more beauty, refinement, service and comfort than ever and will respond to intelligent leading. However, the day for moralizing is past.

When the demand for large returns on investments overshadows the sense of public responsibility too flagrantly the ignored tenant has a devastating "comeback" the minute overproduction sets in. The automatic though unintentional boycott of undesirable quarters forces recognition of the fallacy of poor and unwise construction.

The value of study, especially comparative study of a mature plan, is well reported by William Schultheis in *Building Investment* for March. Fourteen thousand dollars were eliminated from a two hundred sixty thousand cost and eighteen hundred added to the yearly income. The former, he points out, is 87% of the architect's 6% fee, and the latter is 30% of the annual operating expense. This is not an unusual example of the value of study but we quote it for its thorough presentation with comparative plans and summary.

Forward looking architects have projected startling solutions of the future's needs. Transportation, recreation, and the child are considered and given a logical wholesome place. The value of ownership is allowed to operate. Financiers have brought forth more equitable forms of financing and there is no excuse for expensive blunders. The National Real Estate Board is deeply concerned in these things.

Today the "apartment hotel" gives the tenant opportunity to serve himself though surrounded by the exactions of the business world. The "cooperative" is expected to improve not only financing but design and livability. The "suburban" is expected to improve service and comfort and bring some semblance of charm to apartment homes. With lower construction costs and their response to present needs, these fields should prove attractive—especially so, if intelligently studied.

* * *

Today's better apartments on the Pacific Coast are complete and offer the tenant locations impossible to single residences. First we notice their general attractiveness and appeal to tenants, in many ways. The unrelated ornamentation we accept as a necessity of the times, which is balanced by the efforts of the extreme modernist at simplicity. Other details are in keeping.

Garage space is provided for each tenant in or near the apartment building. Space nets upwards of twelve dollars per stall depending on the service rendered. Heat must equal "certified"—the equivalent of a first class engineer's recommendations. Registers are, of course, of modern type and at least covered. Incinerators are standard equipment. Baths are gorgeous in their colored tiles and equipment. Fixtures are

APARTMENTS FOR MARION REALTY COMPANY
SAN FRANCISCO
Douglas Dacre Stone, Architect

sturdy and showers are usual in class "A" constructed buildings.

The finest kitchens are electric throughout. Gas ranges represent a saving in initial cost. Recessed ironing boards find a niche somewhere, usually in the kitchen. Pot, broom and storage closets are essential, with a good bank of cupboards for dishes and supplies. A large woodbox is installed in the service department of apartments containing wood burning fireplaces which are highly appreciated and add considerable to the income.

Sinks are deep with backs and drainboards tiled, or integral of enameled iron. Laundry trays and dishwashers are usually missing in individual apartments. General laundry rooms and private storage spaces become more important as the prospective tenant regards the apartment as "home". General storage rooms use the check system. Movable racks for baggage permit of a very concentrated use of space as well as a method for easy segregation of tenants' goods.

Living room walls are usually canvassed, painted and stippled in first class work. Paper is used in other cases. This permits easier changing to suit new tenants than would stucco, though without the character. The discreet use of the airbrush to vary tones of walls is a relief from plain walls, as shown by the Bellaire's use. Also vaulted ceilings, with deep colored dark doors and light walls relieved by rich colorful carpets, make interesting corridors of conservative length. Double exposure for all living rooms is desirable, but this is partly dependant on plot usage. Floors, except in kitchen and baths, are of select oak.

Bedrooms are located on private halls and all doors throughout the apartment are wood panel. The demand is for complete built-in fixtures in dressing rooms. The completeness varies with the character of the building and practically never equals that in fine residences. A large mirror or mirror door is essential in all cases, as is provision for radio and electric outlets. *always* one is reminded that even a small excess becomes very consequential when multiplied by one hundred apartments.

Building lobbies are small but attractively designed in lasting materials, usually stucco and cast ornament, even in small houses. Except in the tallest buildings the elevators are automatic. A very complete one is serving at 1360 Jones, a ten story building with two large apartments to each of nine floors and a complete residence on the tenth. The special features include collective control, automatic opening of cab door at stops, the return of car to a "parking" position which is changeable as need requires, and the response of the car to a call when empty though door has been left open. Shaft doors, must, of course, be closed. The individuality of the building focuses so forcefully at this point that one cannot refrain responding to the charm of an unusual building. The owner seems especially happy over the investment.

The "efficiency" apartment as exemplified in the plan of the Tudor Apartments, Oakland, represents a unique development in American living, exceeded only by the kitchen group installed in a 30″x72″ closet with wood panel doors off the living room or off halls as in the Beaux Arts of New York. It is largely limited to use in "close-in" properties and apartment hotels. Its intense efficiency worries many women.

APARTMENTS FOR MARION REALTY COMPANY
SAN FRANCISCO
Douglas Dacre Stone, Architect

They have plenty of time and light, airy free space is necessary to their well being and happiness. Arguments defending the necessity of even column spacing, light walls, shafts and income producing areas fall like chaff before them. They firmly believe, "the builder should find a better place for the kitchen than back of the dinette—why you even have to turn on a light

EL ENCANTE APARTMENTS, PALM SPRINGS, CALIFORNIA
Marshall P. Wilkenson, Architect

to get a drink." True on some light wells but it is the light well which needs study, also the window sizes and the placing of the glass therein.

All civilizations have faced congestion, especially in the less desirable living quarters. It is inevitable, but today's designers have exceptional facilities for overcoming the ill effects. Courage is necessary to combat unthinking tolerance, but it is worth the game *if* one cannot avoid a feeling of responsibility.

The Hollywood and Westwood Village apartments well represent the trend in suburban apartments. The delight of sun and air may hold sway here. The picturesque may be capitalized in locations where a few luxuries can be supported. The suburban type is, of course, low in height, but these are unusually so, giving the ideal residential character. A thirty-five percent occupancy of the land has been found feasible in many locations as against a seventy percent allowed by cities. Thanks to the work of many and particularly of Andrew J. Thomas on the Metropolitan Insurance Company's projects, fifty to fifty-five percent occupancy has been demonstrated as wise. However, a financial setup is essential to the test of any plan or project. The method is simple and will save much useless thinking.

We are reminded of Miss Russell Ward's injunction to provide the "little things" a woman wants, to maintain a satisfied clientele. "It costs no more to do a thing right," sounds like good advice from a consultant.

We could not refrain remarking that "it took clever planning to even provide the building when rents had to be kept low!" but she was ready with the answer, —"Yes, but think what a lot of little things one month's rent will buy!"

We wondered what is wrong with the financial setup that it is not varied to rec-

ognize this fact. The loss of rentals would naturally be less, tenants would be more careful of a home they expected to occupy for a time, and undoubtedly the building's "good will" would add a few more profitable years to its life. The integrity of such outstanding buildings as the Palomar of San Diego by Mead and Requa came to mind, along with other well equipped

In San Francisco the question of a flat fee for rent and service, including gas and electricity is "drawing fire". Tenants are trained to expect to pay for metered service. "Why," they ask, "make the frugal pay with the extravagant?" Owners consulted using flat fee were satisfied with their experiment, claiming the reduced rates at which they obtained power compensated

EL ENCANTE APARTMENTS, PALM SPRINGS, CALIFORNIA
Marshall P. Wilkenson, Architect

houses of San Francisco, which "hold their own" despite surging traffic and changing neighborhood.

Albert H. Larsen confesses to checking the public's reaction to his work by mingling with prospective tenants as an agent, unknown as *the* architect. With a few judicious questions he finds their reaction to studio windows, door ports, etc.

H. C. Baumann, is another architect who believes in close study *on* the job. He wonders why draftsmen so seldom interest themselves in it. The effects of quiet, privacy, neighborhood, and the "little things" are better reflected here. Obsolescence itself is checked by the intangible things which wed a tenant to "his" house. Fortunate when he feels possessive.

for tenant extravagance. Water is, of course, supplied in this way though the water companies find the waste "unbelievable" in unmetered service.

A commissary at 1150 Union Street has solved several other problems. Tenants are supplied with fountain service and simple staples from the supply room by the attendant. Through a nearby grocer other supplies are obtainable at a discount to the house which pays the attendant's wages. He also receives and delivers supplies from other tradespeople, thus eliminating them and the more undesirable agent from the building. Doorman and garage attendants check on other entrances besides rendering their services.

A feature of the tall building is the use

Photo by Clyde Sunderland Studios

TUDOR HALL APARTMENTS, OAKLAND, CALIFORNIA
Miller and Warnecke, Architects

ENTRANCE, TUDOR HALL APARTMENTS
Miller and Warnecke, Architects

COST AND CONSTRUCTION DATA

Name of building: *"Tudor Hall."*
Date of completion: November, 1929.
Total number of apartments: 54.
Total number of apartments per floor: 9.
Total number of rooms per apartment: One-, two- and three-room apartments, 1—one per floor; 5—twos per floor; 3—threes per floor.
Structural frame: steel.
Structural floor system: Concrete slab first floor; wood joists balance of floors. Sound-proofed.
Storage garage in basement, 26 cars.
Heating: Vapor steam.
Lighting: Electric ceiling and bracket lights.
Radiators: Open.
Plumbing: Showers over tubs.
Windows: Wood casement.
Trim: Wood trim.
Cubical contents: 500,000 cubic feet.
Cubic foot cost: 40c.
Total cost: $200,000.00.

Photo by Clyde Sunderland Studios

TUDOR HALL APARTMENTS, OAKLAND, CALIFORNIA

Miller and Warnecke, Architects

TYPICAL PLAN

TUDOR HALL APARTMENTS

OAKLAND, CALIFORNIA

Miller and Warnecke

Architects

of top floors for de luxe apartments commanding considerably better rents than the same area in other locations. An ascending scale is used for all floors after the building emerges into the tower portion. Greater freedom is found in the planning. Especially has George McCrea, architect of San Francisco, approached the ideal of a residence plan in his projected cooperative building at Kearny and Lombard Streets, even using loggias in all apartments. The rear service is well separated from the main entrance, and maid may reach the door by a direct passage from her domain.

Roof gardens are apt to be deserted adjuncts to any house unless well sheltered by walls. The Bellaire is prepared to try out a particularly high and interesting parapet wall. A view "over" will be gained from a lookout platform. This roof is particularly interesting in itself. Ornament is cast in the concrete forms by inserting plaster molds. Spaces are good and service pipes and vents are collected with the flue in the pent house. A four-way outlet on the dry standpipe reminds one that fires are possible in adjacent properties and protection is needed from heat though the Bellaire is fireproof construction, with fire stairs similar to those used in office buildings.

A noteworthy use of plaster is found in the Alexander Hamilton and on several other apartments designed by Mr. Larsen. Being of very rich white Portland cement plaster, closely fluted, it appears to be cast stone. Small joints are cut later.

Sound proofing is the bugbear of apartment building. Much research is going on and several surprises have been sprung, particularly the rating on the single void thickness of hollow tile. Miller and Warnecke find the special plaster backings doing good service in their Tudor Apartments. They did, however, use great care in detailing which, according to all authorities, is important.

RONDA APARTMENTS, HOLLYWOOD, CALIFORNIA
Designed by Benjamin Berry

Lest we grow to feel that distant fields are better, let us remember that according to George Pelham, architect of Hudson View Gardens, then the largest development of its kind in the world, one must look to the West, Chicago, and particularly the Pacific Coast, for the initiation of the vital changes in apartment design. Why do we withhold recognition until New York places her seal of approval? Is it another phase of "outstanding"?

George B. Ford, General Director of the Regional Plan of New York, suggests that courts open toward the river views in the development of the Hudson in order that more may enjoy them. We could go on indefinitely finding individuals seeking to improve conditions but we need widespread recognition of the virtue and profit—a surrender of personal profit for the general good. We are more in need of healthy imaginations and courageous spirits than of either houses or lands!

SHOULD SIGN THEIR WORK

The daily press seems finally to have awakened to the fact that architects are too modest in bringing themselves forward when designing notable structures. Name plaques on the corner stones of prominent buildings are advocated by several newspapers. The San Francisco *Examiner* remarks that Cass Gilbert has received the gold medal of the Society of Arts and Sciences for his masterpiece, the Woolworth Building, and adds:

"Architecture is the one art in which Americans can lay some claim to being preeminent. Yet few Americans know the names of the men who designed the great buildings which foreigners visit and go back home to tell the folks about.

"Arthur Page Brown, for example, designed the Ferry Building. Yet how many of the thousands who hurry through that lovely structure ever heard the name of that architect?"

RONDA APARTMENTS, HOLLYWOOD, CALIFORNIA
Designed by Benjamin Berry

G. W. P. Jensen & Son, Builders

CLAY-JONES APARTMENTS, SAN FRANCISCO, CALIFORNIA

ALBERT H. LARSEN, ARCHITECT

APARTMENT HOUSE FINANCING

by ALBERT H. LARSEN, Architect

WHEN a client commissions an architect to design and construct an apartment building he actually engages the architect to create for him a safe and sound source of income. The architect must therefore be familiar with all the phases of apartment house operations. He must know real estate values, rental locations in the city for various types of tenants, building costs, financing costs and methods, and operating costs. The preliminary design of an apartment therefore should be done on the typewriter.

The first consideration is the locale, as this determines the class of tenants that may be obtained and establishes the type and size of the apartment, the equipment to be included and the income that can be obtained.

The size, shape and value of the lot enters largely into the calculations. The value of the lot determines the size and type of the building to be erected. The lot should be of sufficient area to allow spacious rooms, plenty of closet space, and large, airy and sunny light courts. Too often an otherwise good investment has been ruined by overcrowding and the architect should, in all sincerity and loyalty to the client, strenuously resist attempts to overcrowd the lot.

The type of construction should next be given careful consideration, whether the building be wood frame or steel frame with wood floor joists and concrete or brick exterior walls, an all-concrete fire proof building or a Class A steel frame fire proof building. The type is largely governed by the value and location of the building site, although in the writer's opinion, no multi-family house should be other than fireproof construction. In our experience, we have found that the difference in cost between the Class B all-concrete fireproof building and the Class C semi-fireproof building is so slight, in first cost, as to be almost negligible, and this is rapidly overcome by the large saving in insurance and maintenance cost. Unfortunately, however, most loan supervisors of the various banks and building and loan associations look with disfavor on all concrete buildings due to the poor and improper handling of concrete work in the past by unscrupulous or inexperienced contractors. Today, however, with our scientific knowledge of the physical properties of concrete, mix control, inspection, etc., this prejudice should receive scant consideration for if reputable concrete contractors are employed no difficulties will be encountered.

The matter of proper equipment enters largely into the success of the building. Today, the equipment, built-in appliances, etc., are moving ahead with such rapid strides that the architect is at his wits ends to decide what next to include. We find the average apartment building of today equipped with electrical refrigerators, electric ranges, electric ventilated kitchens, some have electric dishwashers, built-in bottle and can openers, radio systems, cedar chests, built-in drawers, shoe racks, cellarette closets, and what not—with numberless other all new devices continually placed on the market and offered by speculative builders to attract possible buyers or ten-

Photo by Moulin

DETAIL OF ENTRANCE, CLAY-JONES APARTMENTS, SAN FRANCISCO

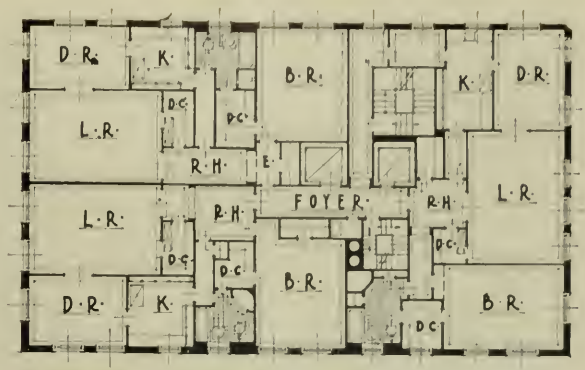
ALBERT H. LARSEN, ARCHITECT

ants. While it is good policy to include all equipment that will increase the welfare and comfort of the tenant, the extravagant use of various appliances should be discouraged as they greatly increase the cost of a building and its maintenance without increasing the income.

These points being settled, the preliminary plans are started in the drafting room, care being taken to include adequate entrance lobbies, rooms properly proportioned to the class of the apartment with proper exposures, large unbroken wall spaces, large closets of sufficient number, concealed radiation if possible, incinerators, electrical refrigeration, proper elevator facilities, ventilated kitchens, ventilated corridors, radio outlets, easily opened windows, high grade gas or electric ranges, step saving kitchens, stainless sinks, mixing faucets, linoleum floors in kitchens, colorful walls, trim and floors, built-in ironing boards, broom closets, numerous electric outlets, modern kitchen cabinets, color tile wainscot and floors in bathrooms, with built-in bathroom fittings, separate showers if possible, otherwise shower tub combinations, colorful shower curtains, medicine cabinets, shaving lights, linen closets, luminous door numbers, phone connections, fireplaces, modern wall finishes, quality window shades, decorative lighting fixtures, cedar closets, built-in drawers, dressing tables, shoe racks, cellarette closets, house laundry and drying room, dry storage rooms, garage, delivery room, sound proofing, etc. From these preliminary sketches definite cost data must be compiled.

With the reality value and the cost of the building known, the next problem is to determine the operating cost, the probable gross income and the net profit. It is upon this data that the loan companies will either make or reject the loans applied for.

Into this problem enter such items as interest to be paid on the loan, the amortization thereof, taxes, insurance, such as fire, earthquake, liability, boiler, compensation, etc., water, heat, electricity for lights and power for motors, elevators, hot water, help, depreciation, janitor supplies and average vacancies.

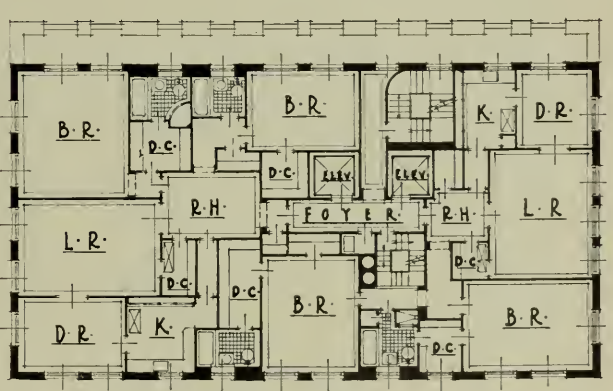


1ST TO 10TH FLOORS INCLUSIVE

CLAY-JONES APARTMENTS, SAN FRANCISCO
Albert H. Larsen, Architect

COST AND CONSTRUCTION DATA

Name of building: *Clay-Jones.*
Date of completion: 1930.
Total number of apartments: 47.
Total number of apartments per floor: First to tenth floors, inclusive, 3 apartments per floor; eleventh to seventeenth floors, inclusive, 2 apartments per floor.
Total number of rooms per apartment: 4 rooms, 5 rooms.
Structural frame: Steel.
Structural floor system: Concrete floor slab.
Heating: Steam. Lighting: Bracket.
Radiators: Open.
Plumbing: Separate showers.
Windows: Wood D. H.
Trim: Wood.
Cubical contents: 978,814.
Cubic foot cost: 60c. Total cost: $585,000.



11TH TO 17TH FLOORS INCLUSIVE

CLAY-JONES APARTMENTS, SAN FRANCISCO
Albert H. Larsen, Architect

ALEXANDER HAMILTON
APARTMENTS
SAN FRANCISCO

COST AND CONSTRUCTION DATA

Name of building: *Alexander Hamilton.*
Date of completion: 1930.
Total number of apartments: 212 (2-room apartments); 56 single rooms.
Total number of apartments per floor: First to twelfth floors, inclusive, 15 apartments per floor; thirteenth to sixteenth floors, inclusive, 7 apartments per floor.
Total number of rooms per apartment: 1 and 2 rooms; 1 each—5, 6 and 7-room apartments.
Structural frame: Steel.
Structural floor system: Concrete floor slab.
Heating: Steam.
Lighting: Ceiling.
Radiators: Open.
Plumbing: Showers over tubs.
Windows: D. H. Wood.
Trim: Wood.
Cubical contents: 1,853,794.
Cubic foot cost: 56c.
Total cost: $1,050,000.

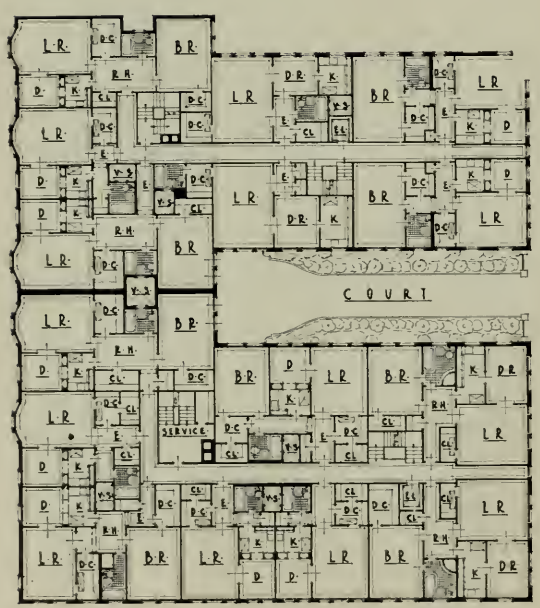
DETAIL, LOWER STORIES, ALEXANDER HAMILTON APARTMENTS, SAN FRANCISCO
Albert H. Larsen, Architect

Mural, "The Gate to the Orient," by Frank W. Bergman

CORNER OF LOBBY, ALEXANDER HAMILTON APARTMENTS, SAN FRANCISCO

ALBERT H. LARSEN, ARCHITECT

EDDY-OCTAVIA APARTMENTS, SAN FRANCISCO
Albert H. Larsen, Architect



TYPICAL FLOOR PLAN

EDDY-OCTAVIA APARTMENTS, SAN FRANCISCO
Albert H. Larsen, Architect

COST AND CONSTRUCTION DATA

Name of building: *Eddy-Octavia**
Date of completion: 1929.

	No. 1	No. 2
Total No. of apts.	48	42
Total No. of apts. per floor	8	7
Total No. of rms. per apt.	2, 3 & 4 rms.	2 & 3 rms.
Structural frame	Steel	Steel
Structural floor system	Wood Joists	Wood Joists
Heating	Steam	Steam
Lighting	Ceiling	Ceiling
Radiators	Open	Open
Plumbing	Showers over tub	
Windows	Wood D.H.	Wood D.H.
Trim	Wood	Wood
Cubical contents	654,372	533,358
Cubic ft. cost	38c	38c
Total cost	$250,000	$265,000

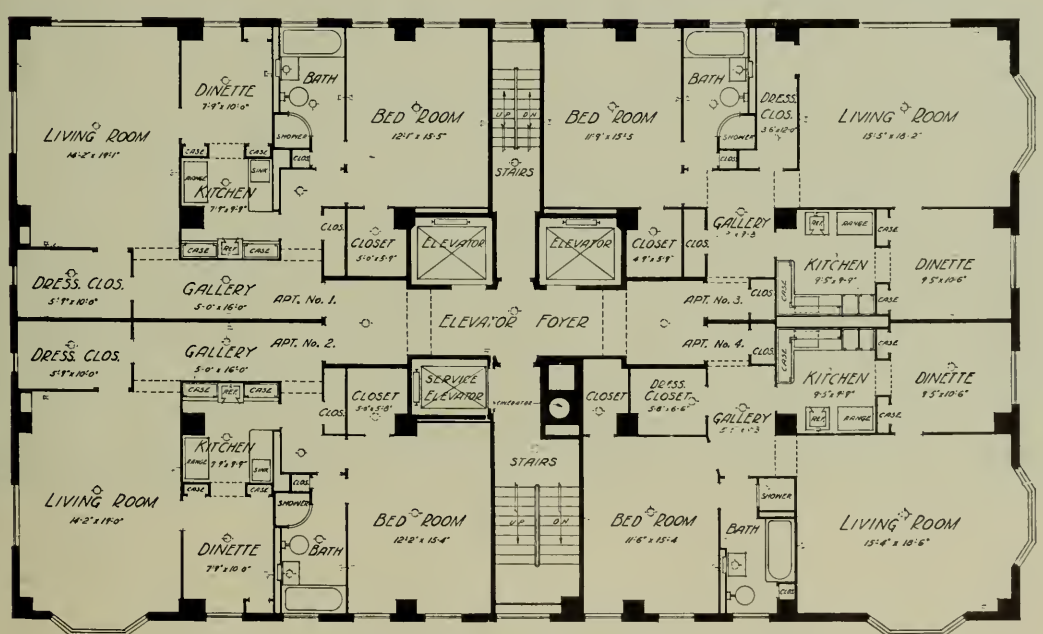
*Project composed of two separate buildings.

The cost of the project and the net income being known the equity to be maintained by the client may be readily determined.

There are four general means of financing apartment building projects. The first is institutional loans, such as life insurance companies, title insurance companies and savings banks which generally lend 50% to 60% of the appraised value of land and building; second, by bond issue which amounts usually from 65% to 70%; third, by a bond issue or institutional loan, supplemented by a second mortgage or stock subscription, and fourth by a building and loan company whose loans generally average 75% of the value of the building and land.

The various sources of loans have their advantages and disadvantages. Institutional loans have the advantage of low initial cost, average 2% to 4% with loan interest rate generally from 5½% to 6½%. Its disadvantage is that the client generally expects to be able to borrow more capital, and as these loans are matured at the end of five years, a sinking fund must be established so as to pay off part of the mortgage thereby insuring refinancing at a minimum cost.

BELLAIRE APARTMENTS
SAN FRANCISCO
H. C. Baumann, Architect

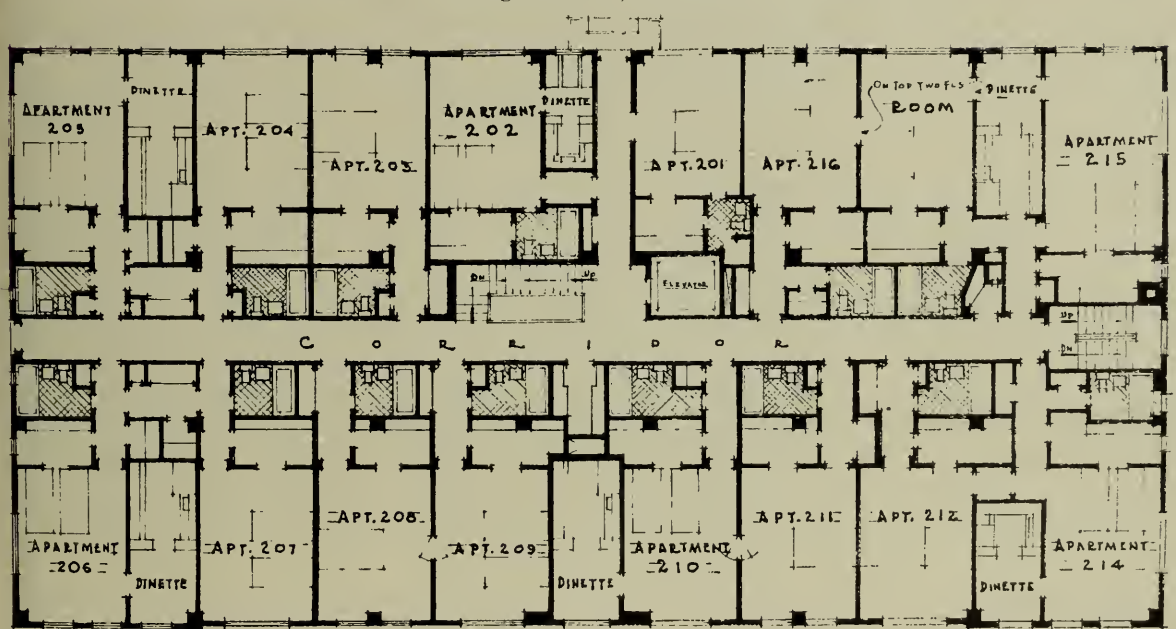


TYPICAL PLAN, BELLAIRE APARTMENTS, SAN FRANCISCO
H. C. Baumann, Architect

ENTRANCE LOBBY, PRESIDENT HOTEL APARTMENTS, PALO ALTO, CALIFORNIA

BIRGE M. CLARK, ARCHITECT

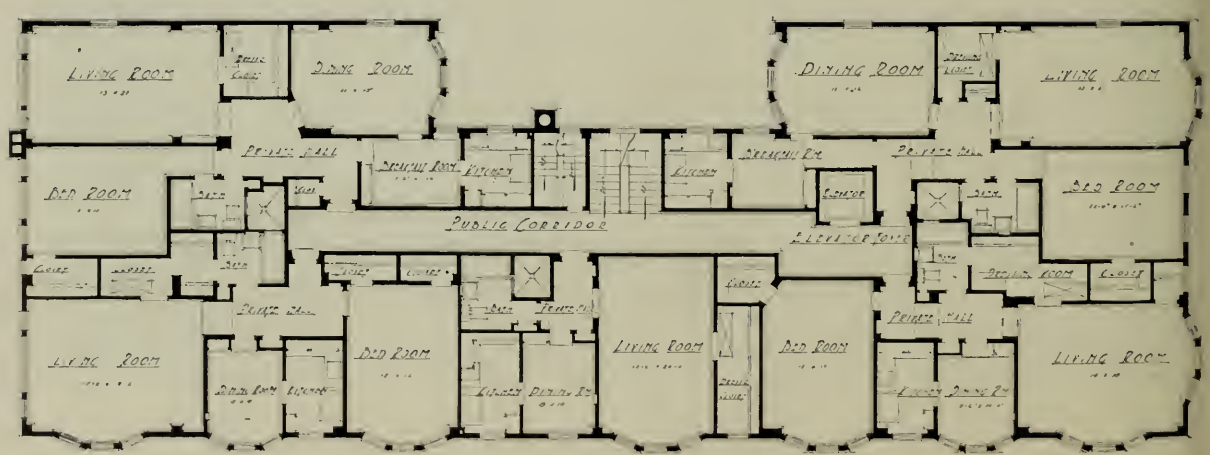
PRESIDENT HOTEL APARTMENTS, PALO ALTO, CALIFORNIA
Birge M. Clark, Architect



TYPICAL PLAN, PRESIDENT HOTEL APARTMENTS, PALO ALTO, CALIFORNIA
Birge M. Clark, Architect

APARTMENT HOUSE, PACIFIC AVENUE NEAR LAGUNA, SAN FRANCISCO

Douglas Dacre Stone, Architect



TYPICAL PLAN, APARTMENT HOUSE, PACIFIC AVENUE NEAR LAGUNA, SAN FRANCISCO

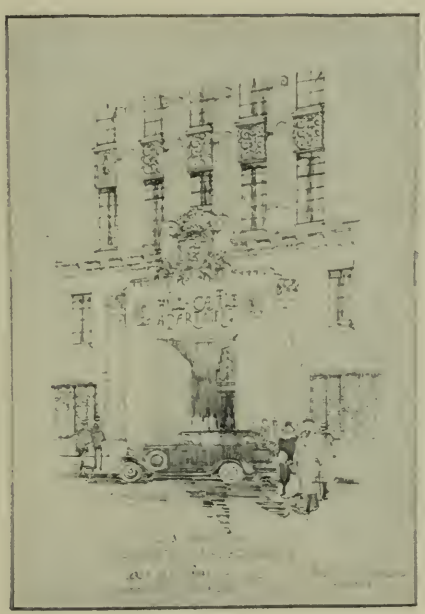
Douglas Dacre Stone, Architect

The only appeal the bond issue has is to reduce the cash equity supplied by the client but the attendant disadvantages are so pronounced that this system of financing should not be resorted to if institutional finances are available. The initial cost of a bond issue today is from 8% to 10% of the amount of the loan with interest at the rate of 6% to 6½% with an annual amortization of approximately 3% to 4%.

The combination bond issue and second mortgage should never be used unless the second mortgage runs for a sufficient length of time to permit complete liquidation at maturity, otherwise serious embarrassment may be encountered.

Building and loan financing is resorted to where amounts sufficient to appreciably decrease the client equity is desired. The cost of obtaining this type of loan varies from 2% to 3% and the interest rate varies from 7% to 8.4% while the amortization rate is generally around 5%. While this type of loan has the advantage of reducing the amount of capital that would otherwise have to be invested by the client and reduces itself as it goes along, it has the disadvantage of reducing the net cash income. Another serious disadvantage is that this type of loan generally does not provide any period between the completion of the building and that necessary to get the building occupied, but requires that the loans start to amortize sixty days after the completion of the building.

Finally in the preliminary set up, the financing cost, interest during construction, insurance during construction, and a sufficient cash reserve to operate the building for six months after completion, must not be overlooked, if you conscientiously desire to avoid placing your client in an embarrassing position.



DETAIL OF ENTRANCE
HILL CASTLE APARTMENTS
OAKLAND

HILL CASTLE HOTEL APARTMENTS, OAKLAND, CALIFORNIA

MILLER AND WARNECKE, ARCHITECTS

GARDEN AND FOUNTAIN APARTMENTS

JOHN TAYLOR BOYD, JR., discussing the opportunities of architects in the design of garden apartments, says in the September *Forum*: "Within the past ten years the garden apartment has come to the fore as one of the important classes of American buildings. Whether this is likely to continue is an interesting question. I believe that the answer is in the affirmative. There is good reason for believing that conditions and tendencies in the real estate field of today offer excellent opportunities for the garden apartment type in the years immediately ahead.

"Experience with the garden apartment has proved rather conclusively that it has marked superiority over the two competing classes of residence buildings,—the individual house, either of the detached or the row type, on the one hand, and on the other hand the old fashioned congested apartment house that is built as solidly up to the building line and to the property lines as law will allow. As regards the first competitor, it is noteworthy that the trend toward apartment house living has set in, stronger than ever during the last couple of years, as statistics of new construction show. This appears to be true all over the country, even in those cities where authorities once declared that people would never forsake their individual homes for apartments. But householders, particularly young married people, prefer the greater conveniences of an apartment and the central location that is likely to go with it, to say nothing of its greater economy. People also wish to have as much as is practicable of the amenities, and with the beauty and the openness, light, garden surroundings and the outlook that characterizes the detached house in mind, they naturally prefer the garden type of apartment. So much for the point of view of the renting public. From the viewpoint of the promoter or investor, the garden apartment has in general superior investment value over either the older apartment type or the individual house. Thus, it is likely to be the easiest type to finance. I believe that mortgage interests are recognizing this fact.

"Nearly every one of the older large cities of the United States has blighted districts on the edges of the finest business or residential centers, where land values are comparatively low, inviting profitable reconstruction with new buildings. Here is one of the finest opportunities for the building industry that could be found. But the work must be done in a large way, and on sound principles. A striking example of the economy of the garden plan came to my notice recently in this connection. A builder had a plan for a medium-priced, six-story elevator apartment house, on an inside plot with 80 feet frontage, 20 rooms to a floor, coverage nearly 70 per cent of the property. I compared it with a plan that we had drawn for a whole block, 600x190, covering 55 per cent and with somewhat larger rooms, every one with fine outlook over either street or huge interior garden, running almost the full length of the block. Now, the first plan showed an average of 4 feet of street frontage for each room per floor, whereas, the garden apartment plan showed 4½ feet of street frontage per room per floor,—apparently a difference of 12½ per cent in favor of the high-coverage plan; but when it is understood that in the small congested plan there were two small apartments with four of the 20 rooms with low rental value because they were located on small side lot line courts, and also that the eight rear rooms were located on a very narrow yard with a shut-in cheerless outlook, it will be seen that the large block, low-coverage plan has actually a higher number of good rooms per front foot than the small plan has. The superior efficiency of the lower-coverage plan in this particular comparison has, be it noted, no reference to land values. In addition, there was considerable extra expense involved in the small

JEANNE ARMS APARTMENTS
SAN FRANCISCO
Albert H. Larsen, Architect

plan in the long public corridors necessary to provide access to the single elevator. These were absent in the other plan.

"Of course, when a small builder is shown these facts he may reply: 'I see the point all right, but I haven't enough capital to go into a larger operation.' Equally, of course, when you suggest that he combine in a group with other small builders who, like himself, wish to enter the district in a small way, to carry out a large operation and split the risk, you find that he is too much of an individualist to welcome the suggestion. But that sentiment will pass, particularly when the small builder gets the same advice from mortgage people, as now seems likely.

"The main obstacle to the progress of the garden apartment idea, is the small property owner. As every one who has ever tried to assemble a large plottage knows, it is the small property owner who often balks the project in one way or another. But even

COST AND CONSTRUCTION DATA

Name of building: *Jeanne-Arms.*

Date of completion: 1929.

Total number of apartments: 42.

Total number of apts. per floor: 7.

Total number of rooms per apartment: 2 and 3 rooms.

Structural frame: Wood joists supported by steel frame.

Structural floor system: Wood joists supported by steel frame.

Heating: Steam.

Lighting: Ceiling.

Radiators: Open.

Plumbing: Showers over tubs.

Windows: Steel casement.

Trim: Wood.

Cubical contents: 498,482.

Cubic foot cost: 36c.

Total cost: $175,000.00.

DETAIL, ENTRANCE, JEANNE ARMS APARTMENTS
Albert H. Larsen, Architect

here there is prospect of improvement. There is to be detected the beginning of a realization that under the complex conditions of a large city the holding of real estate in small parcels is becoming uneconomic. It is risky business for the small holder as well as for the building industry. The practice is a relic from the days when real estate afforded one of the few avenues open for small investments. But it is getting to be precarious for the small holder to hold a small parcel, mortgaged up to the neck, as it often is, and his thin equity is easily wiped out in the swift changes in real estate conditions in a city, with the danger of being "closed in" to provide a light shaft for the large operation next door, along with the prospect of meeting one or more of those huge unexpected assessments for the colossal modern improvements of the city which may add value eventually to his little property, but which it may be impossible for him to finance in the interim, thus forcing him out. There are other reasons, too, not the least of which is the aforesaid buyers' market. In the building industry there are found many individuals who entertain quaint notions of economics. One of these myths is the idea that land values always rise, on the principle that trees can grow to heaven. This theory of the permanent bull market in real estate, as in securities, is possibly not so popular now as it was a while back.

"After all, the value of a site is based on the earning power of the building erected on it. As changes in market demand for buildings affect their earning power one way or another, so does the value of the site change similarly. Eventually, the owner of the site must change his price to agree with its altered value. Thus, the trend toward the larger operation, no matter what class of building is involved, cannot be stopped by arbitrary notions of fixed or rising land 'values'. The garden apartment should benefit increasingly.

"In conclusion, it may be said that the standard of design, construction and equipment of the garden apartment is always improving, and this makes it additionally attractive to the public."

EL GRECO APARTMENTS, WESTWOOD VILLAGE, LOS ANGELES
Pierpont and Walter S. Davis, Architects

THIRTEEN-SIXTY JONES APARTMENTS, SAN FRANCISCO, CALIFORNIA

WILLIAM E. SCHIRMER, ARCHITECT

THE ARCHITECT AND THE BUILDING INSPECTOR

by ROBERT H. ORR, A.I.A.*

OF all laws enacted for the benefit of human welfare none are more important than the laws pertaining to health. Closely related to health, and upon which it largely depends, is sanitation. The handmaid of both is our housing and building laws and ordinances. Health, sanitation and housing affect every man, woman and child in all civilized countries. Let an epidemic occur, our buildings will be dynamited and razed, human bodies will be heaped in the streets and burned in order to stamp it out. We are engaged in a service which directly cooperates with the health departments in bringing about better living conditions and sanitation by erecting buildings. But we are not permitted to tear down the most miserable shack it being deemed confiscation of property.

This state has wisely set up housing laws which aim to protect the health and happiness of its citizens. Health follows by reason of good wholesome living conditions, happiness follows by reason of health and pleasant surroundings. The state's housing laws are mandatory upon all those who build, and the enforcement of its provisions are left to the building inspectors of the municipalities. There is no court of appeal or arbitration, no near standards to which a near approach can be determined.

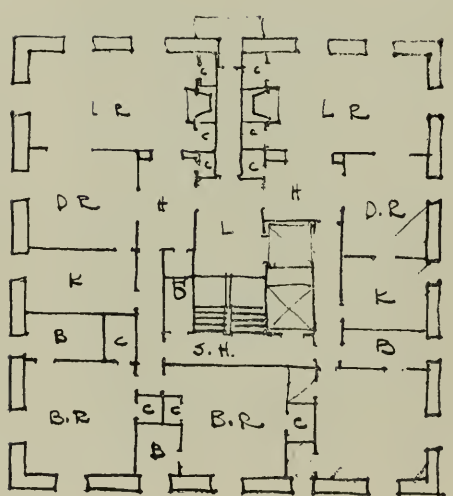
Under the state comes the next subdivision of our commonwealth, the counties. Most all counties are without building ordinances, except where there is a city and county government, and all are subject to those enacted by the state. Most all counties are well provided with sanitary laws, but are quite deficient in building laws. While no great harm has been done thus far, it seems quite unfair that the incorporated cities and towns are left with their city limits unprotected from the investor who may be able to shift or jeopardize the business center by erecting a tall building just beyond the city limits.

Much has been said about being "air minded" which we apply to aeronautics, but we are confronted by another air minded group. In cities each block tries to outdo its neighbor. Our municipalities, without height limits, try to outdo one another by erecting the tallest building. This has led to an intense discussion concerning the maximum height of buildings to be erected as a safe investment. How high can they be built without congesting the traffic of the street? To what height can buildings be erected within which modern fire fighting apparatus may be able to cope with fire? With elevators that may offset and work in relays, they may be depended upon for any height. To those who have given intensive thought to the subject, the question seems to be to what height can buildings be erected and leave a factor of safety in the sustaining members?

The builders of this generation are so air minded that the maximum height has not yet been calculated. It will be greater as lighter materials are found. Plastering materials are now being used that weigh one half of the usual lime and sand mix. Why load a building with sand when pumice stone will give the same binding results, with a material reduction in weight? It will be greater when new formulae are found for metals that will carry stresses far exceeding the standards now allowed for modulus of elasticity and rupture. Already announcements have been made of such metals for airplane use, and eventually they will be available for steel structures. With these air minded builders and our civic borders

*An address at the Pacific Coast Building Officials Conference, Long Beach, California.

LIVING ROOM, THIRTEEN-SIXTY JONES APARTMENTS, SAN FRANCISCO
William E. Schirmer, Architect



PLAN, MAIN FLOOR, THIRTEEN-SIXTY JONES

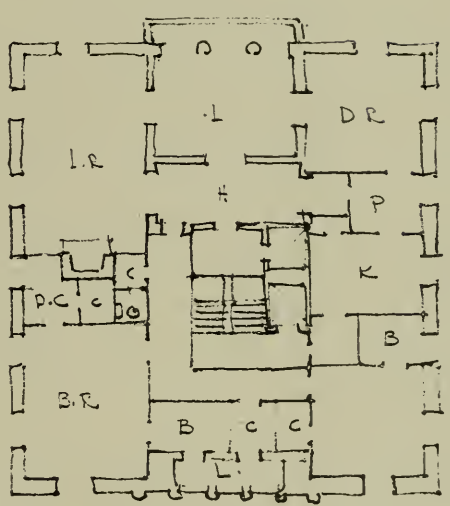
unprotected, it does seem incredible that our country governments are without building ordinances, similar, if not identical, to those of the incorporated cities, regulating the construction of all classes of buildings and height limits, with adequate building codes or ordinances. Also provisions made for an inspector in every building subdivision, as fully qualified technically, as those within our municipal governments.

What does all of this have to do with cooperation between the architect and building inspector? Using the words "architect" and "building inspector" in their widest sense, the architect may supervise his work or engage someone to do so; the building inspector may be the head of the depart-

DINING ROOM, THIRTEEN-SIXTY JONES APARTMENTS, SAN FRANCISCO
William E. Schirmer, Architect

ment or one in any way having to do with the enforcement of building ordinances. Cooperation or combined effort applies to those who create by design, or those who oversee construction and those who engage in the application of building materials.

It is to the cities that our thoughts are to turn as the inspiration and guide in structural matters. The larger the city the more exacting must be its relations between the architect and building inspector. Within the large cities are created the initiative in design and construction, marching hand in hand with science and invention. Ever increasing problems are presented to meet the need of modern conditions. It may be a building with a large landing deck for air-



PLAN, TENTH FLOOR, THIRTEEN-SIXTY JONES

plane carriers; resilience of floors, take off impulse accelerators, momentum arresters and cheval net protectors, limits beyond which no means has yet been devised for lighting and ventilating a vast enclosure. Or it may be a hanger far beyond the areas of now known buildings, subject to the most intense fire hazards by reason of an ever present abundance of explosive fuel augmented by vaporized fuel for cleaning purposes. It may be a large steel building built with battle deck construction, the principle of construction employed in the great ocean liners which is coming into use for steel frame buildings. All of these will call for a new vision in building codes and ordinances, and the execution of their technical provisions by the architect and building inspector.

Wise will be the architect, and guarded in his relations to his client if he will take the opportunity to consult the framers of the ordinances, or those most capable of interpreting its building provisions before seriously engaging in the preparation of plans. Codes or ordinances are minimum requirements and if ambiguous, of course, more than one interpretation may be placed upon their construction. For many years a building code that limited the height of super-structures above a maximum limit height building was applied to each structural unit. A pent house could have a certain height, a sign structure could be so high, each measured from the same beginning point, until some enterprising architect placed one above the other and the ordinance could not prevent it, all of which led to a revision of the limit height code.

There is a marked difference between the supervision given to construction by the architect, and that by the building inspector responsible to the law. They have things in common, but by the very nature of their training they are different. They approach the problem with an entirely different thought in mind. The architect is concerned about the construction according to the plans and specifications. He will see that each opening is left in its proper place, that provisions are made for placing trim, that the proper run and rise are given to stairways and that there is sufficient head room for clearance. He will be interested in the esthetic values, the selection of materials, the joinery, the textures, the degree of smoothness, the carrying out of full size details, profiles of mouldings, the harmony of colors, paneling, cabinets, the modeling of ornaments, the decorative motifs, number of coats of finish and many other things that do not interest the building inspector, except as they may affect the plans and specifications, which they do not apply, so far as he is concerned, if they do not conform to the building ordinances. From the very nature of his training the inspector will be on the alert for structural things. Has the ground been filled; has the proper load per square foot been allowed; have the reinforcing bars been properly placed; is the concrete aggregate of proper proportions; has the riveting of structural parts been well done; are timbers properly framed? After plastering, wiring, roughing in for plumbing fixtures and securing of roofing materials are thoroughly inspected, most of the rest is left to the architect's supervision. Hence the difference between supervision and inspection. Supervision will plan and lay out in advance the things that are to be done; inspection will apply when they are about to be done or afterward.

The building codes do not regulate specifically those matters herein grouped for the architect, they do regulate those applying to the building inspector. So it does seem apparent that they are differently minded individuals. The architect is cautious about construction, yet wanting to create a pleasing effect, eager to satisfy the owner, seeking the beautiful. The building inspector, mindful of building regulations and laws, interpreting what the law does say, insisting upon the work being strong, safe, protecting the inhabitants, and keeping out the weather; he may not be interested in whether the building will be warm or cold, not at all interested about its beauty, convenience or adaptability. And yet both are right. One is vested under the authority of a law as an individual licensed to practice a profession; the other is charged with

the enforcement of the law and its provisions, with police power to stop and enforce, "It shall be unlawful."

Beauty is one of the most essential and enduring things about buildings. If you do not believe it, go abroad and see the wonders of the world in structures. The whole world is the looser when one of these land marks disappears. Comfort and convenience are essential. Who wants to live in an uncomfortable home or work in a poor office building? Who wants to be inconvenienced by a bad plan?

Here is such a wonderful opportunity for cooperation. The architect when in doubt about the provisions of the code, consults the inspector; in doubt about legalized materials, consults the inspector. No architect should attempt to cover up, but should be frank and fair. Confidence once lost, cannot be easily reestablished. How about the plans? Have they been well prepared, details clearly shown, headroom around stairs properly laid out? No one can hold the inspector responsible if it is found on the final check up, that the toilets are one inch shy in width, stairway an inch or two too narrow, head room insufficient, beams with impaired clearance for head room. These are things the architect should guard against and for which he should be responsible. These are architectural problems.

How about the plans the inspector checked and for which he issued a permit for construction? Were they plans or sketches? Could they be checked intelligently? Will they be understood by the field inspector? Will he be able to reconcile the plan to the construction? Has the owner been given a fair chance to get good value from the plans passed? Can any blame be properly placed for faulty construction? Has the owner any right to expect that the building inspector will protect his interest, when he does not take the precaution to supply definite plans? The owner has some rights, because he pays taxes that go to support the building inspector. Who ever heard of an owner lodging a demand that the building inspectors insist upon better construction?

It is a well established fact, in building departments, that where the architect's supervision is dispensed with, the final check will develop innumerable things that have been overlooked. When both the architect and building inspector have cooperated upon a building, it is seldom that technical violations occur, and on the other hand many things are done that will work for the benefit of the building.

It is also observed that buildings built for investment are not as well built as others, although the laws and ordinances are the same. This is especially true about apartments. Note the apartment house damage to the extent of from ten to twenty thousand dollars by the last earthquake that occurred in Southern California. It was not a severe earthquake. No damage of any consequence was reported upon other types of buildings. These are illustrations on non-cooperation. A poor set of plans and specifications, intended to allow cheap construction, and an inspector hampered by every known trick to cover up poor construction, can produce a building which is a menace to life and limb.

There should be two values placed upon a structure. A building with the services of the architect and inspector should be of greater value then one without it. Every financial institution should recognize this. The investor should acknowledge it. The purchaser of a home should consider it a mark of dependability. On no account should a lack of these virtues be placed upon the inspector alone when the architect's services are lacking, he cannot take the place of two men of different technical values. Building departments should make it compulsory for an owner to pay an additional permit fee, when the architect is not required to supervise the work because it places an added burden upon the inspector. And in such a case additional inspection should be required of the department. The building inspector's work is made easier by a complete set of plans and specifications. Upon them is established basic grounds for cooperation. The architect has a feeling of security and satisfaction, when he knows the safety tests have been applied in the checking of plans and the field work has

come under the scrutiny of technical men.

Cooperation then should mean the architect welcoming the technical advice that a building department has to offer, for it is to be expected that the architect is not versed in the knowledge obtained by the various building divisions, plumbing, electrical, heating ventilating and mechanical equipment, which inspectors obtain and put into practice, from standards established by national bureaus. Cooperation should place some established value upon plans and specifications. There cannot be cooperation, in its truer sense, where there are open questions for controversy. As a rule the outcome of a disputed question will be the accepting of a standard which would be of least value to the building.

Cooperation of the architect and the building inspector, will p r o d u c e better buildings, a safer investment; buildings built in conformity with good practice, less fire hazards, more earthquake resistance and which will keep out the weather. It will have an immediate reaction, a satisfied owner. Such a building will be a real asset to the community, and a monument to posterity.

No one can go about the country and fail to point out buildings in which they have cooperated. The architect derives a sense of satisfaction when he can point to some land mark that he has done; and the inspector can take just as much pride in a service which does so much good for a community.

In closing let me summarize ten points upon which we as architects and inspectors, should cooperate.

1. Insist upon a survey of the property. I have known inspectors to find, after the foundations are in, and just as often after the building has been erected, that the courts and yards are not on legal dimensions, because the lot line was not established.
2. The architect should consult the inspector about the salient points in the plan, before making the working drawings.
3. Check with the engineering department, and ascertain the fill, if any, and determine the nature of the soil.
4. File a complete set of plans with the building department. Some architects hold out detail sheets. These are necessary and should be filed.
5. Do not begin work of any nature until a building permit has been issued and posted. Notify the inspector about all matters that require it.

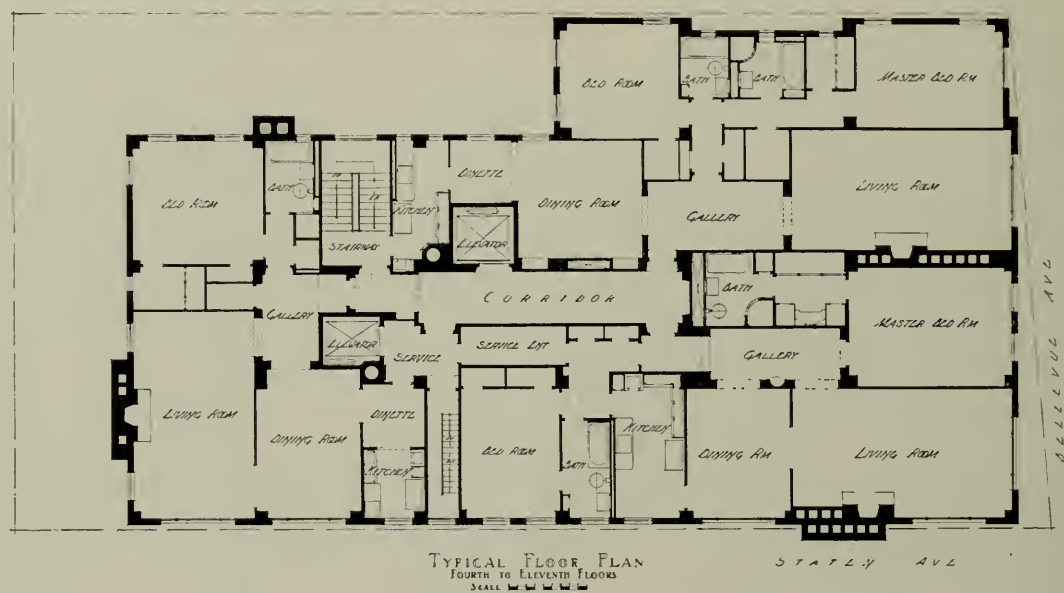
The first five points have to do with matters before construction, let us consider five general rules for the period of construction.

6. The architect should have a supervisor upon the work during the pouring of concrete, the inspector to check the placing of reinforcement and give general inspection to the aggregate. Special care should be given to the materials furnished for the superstructure, adhering to the standards established by the building department. Require certificates to be furnished for all registered materials.
7. Do some measuring and leveling while the building is under construction. It is not sufficient to just look at things. Check the plan against the construction upon all points. Many technical violations occur, by not allowing for the thickness of the subfloor in laying out stairways.
8. Above all things have confidence one in the other. If there is confidence, the architect can give his attention to the aesthetics, the finishing of materials, decoration and innumerable small details. The inspector can give his time to such technical matters as heating, ventilating, plumbing, electrical work and mechanical equipment.
9. See that the jurisdiction held by other bureaus, health, sanitation, fire, police, state housing, industrial accident and fire underwriters has been cleared.
10. The final check should be made in the presence of the architect, his supervisor and the building inspector. A certificate of completion should register deficiencies as a permanent record which may be obtainable when property is transferred. Such a procedure will protect the public and the investor.

Photo by Morton

BELLEVUE-STATEN APARTMENTS, OAKLAND, CALIFORNIA

H. C. BAUMANN, ARCHITECT



BELLEVUE-STATEN APARTMENTS, OAKLAND, CALIFORNIA
H. C. BAUMANN, ARCHITECT

Photo by Morton

BELLEVUE-STATEN APARTMENTS, OAKLAND, CALIFORNIA

H. C. BAUMANN, ARCHITECT

Photo by Morton *Exterior of McNear Common Brick*

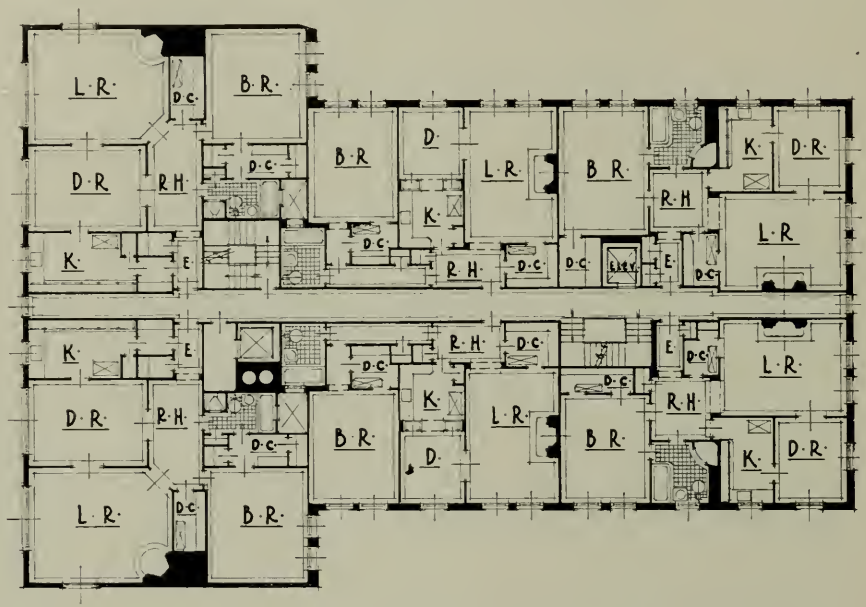
DETAIL OF ENTRANCE, BELLEVUE-STATEN APARTMENTS, OAKLAND

H. C. BAUMANN, ARCHITECT

Photo by Moulin

ELEVEN-FIFTY UNION STREET, SAN FRANCISCO

ALBERT H. LARSEN, ARCHITECT



TYPICAL FLOOR PLAN

ELEVEN-FIFTY UNION STREET, SAN FRANCISCO

ALBERT H. LARSEN, ARCHITECT

Photo by Moulin

LOBBY, ELEVEN-FIFTY UNION STREET, SAN FRANCISCO

ALBERT H. LARSEN, ARCHITECT

Photo by Mott Studios

EL GRECO APARTMENTS, WESTWOOD VILLAGE, LOS ANGELES

PIERPONT AND WALTER S. DAVIS, ARCHITECTS

Photo by Mott Studios

COURT OF FOUNTAINS APARTMENTS, HOLLYWOOD, CALIFORNIA

PIERPONT AND WALTER S. DAVIS, ARCHITECTS

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PIERPONT AND WALTER S. DAVIS, ARCHITECTS

THE FIRST ALL-METAL APARTMENT HOUSE

TO build an apartment house which would have the maximum usable floor area and number of floors compatible with livability, economy and the building code, was the architect's problem in designing the Lake Front Building, Chicago.

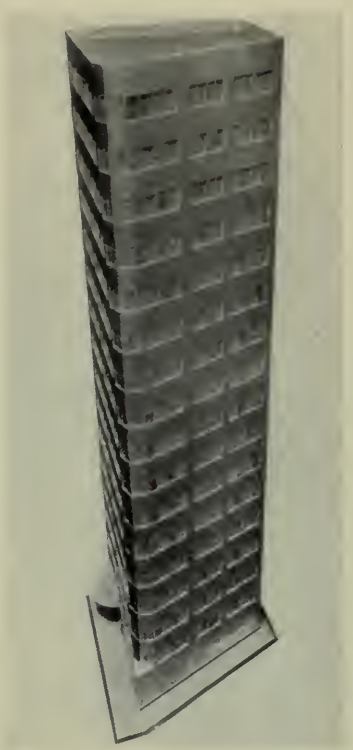
Insulated metal walls which increase the net floor area and decrease the heat loss and cost less than masonry, are construction features of this building, described in a recent issue of the *Architectural Record*. The structure is equipped with battledeck floors which permit the addition of another floor and still keep within the height limit of the zoning ordinance. The reduction in heat loss through insulated walls and double windows, and savings in construction cost, permit the inclusion of such additional features as electric heat and other special equipment.

Fireproof spandrel wall construction was used to increase the usable floor area, decrease the dead load of the walls, increase the heat insulation value of the exterior walls, eliminate trouble from leaking walls and at the same time reduce the first cost of the building.

The savings* through using metal walls is 135 square feet or 14% of the net rentable area if it were built with brick walls.

A decrease in the thickness of the exterior walls of a building means an increase in floor area. In the case of a building with a comparatively small ground area this increase will be a large percentage of the net rentable floor area, which will represent a greater return to the owner in inverse ratio to his equity. The larger the plan area the less will be the percentage of increased return on the owner's equity.

*Brick Wall 1'-2"x153'=179 sq. ft.
Metal Wall 3½"x153'= 44 sq. ft.
Saving 135 sq. ft.



MODEL OF ALL-METAL APARTMENT HOUSE
CHICAGO, ILLINOIS
Bowman Brothers, Architects

Applying this method to an office building of same area and shape renting at $4 a square foot, the rent with the masonry walls would be $3,860 a year, whereas with metal walls the rent would be $4,400, an increase of $540 or 14% on the gross income for each floor. As a matter of fact the metal walls will cost less as shown later.

This increase of 14% in the income of the entire building will represent an additional net income on the equity of 56%, if the equity is assumed at one-fourth of the total cost of the project.

This is an exceptional case; in the ordi-

nary office building the increase in net rentable floor area for a large ground plot would not ordinarily exceed 3%. This would represent an additional net income on the equity of approximately 12%, assuming that the equity is 25% of the total project cost.

An analysis was made of different types of metal walls including:

I. A wall built of sheet aluminum with aluminum framework within, waterproofed and insulated, etc.;

II. A wall built of sheet aluminum with steel framework within, waterproofed and insulated, etc.;

III. A wall built of Allegheny Metal "KA2" (not to be confused with stainless steel "Ascoloy" which is the name given to chromium steels without a nickel content.)

A wall built of "Ascoloy" sheets with steel framework within, waterproofed and insulated, was discarded because of the cost of the necessary maintenance. Steel sheet was also considered instead of "Ascoloy" but was discarded because of the cost of necessary maintenance.

Other metals were also included but are not interesting because of their high cost or lack of practicability.

In each case these metal walls were designed as slabs where the live load was represented by the wind load. The thickness of the metals was varied according to respective tensile strengths and designed by the deflection formula. A large factor of safety was allowed to take care of intangible items, such as vibration and shivering under a high wind, denting, etc.

The method of fastening was a problem. Riveting the sheets was discarded as impractical, due to the difficulty of matching holes in sheets to holes in the framework of the wall. Welding was also discarded as being too costly and actually not necessary. The method which proved to be the most practical from the standpoint of good construction and economy and erection time, was clamping the sheets to the framework with straps, all edges having been formed in the shop to permit lock-seaming.

Allegheny metal, which was selected for the wall, does not require paint or maintenance of any kind for at least thirty years. This wall will cost for metal in place approximately $1.20 a square foot, plus $.16 for insulation, plus $.17 for metal lath and plaster, or a total of approximately $1.53 a square foot of wall surface which is less than masonry wall ($2.17 a square foot) with waterproofing, furring, lath and plaster.

It must be kept in mind that the above described metal wall is equivalent to a 36″ brick wall in heat insulation value and if the cost of a 36″ brick wall (stone facing) were compared with the above metal wall a still greater difference would be apparent. Or by adding the cost of 2″ of insulation to the 12″ stone wall with brick backup, a fair comparison would be made.

The time saving effected by the use of a metal wall is considerable and must be taken into account. Furthermore, the maintenance of stone walls (tuck-pointing, cleaning, etc.) is costly, whereas the metal wall requires none.

The metal wall is to be backed with 3″ slabs of rock wool for insulation. The flooring selected is all steel battledeck, steel girders and columns.

The metal building is like a large Meccano set, fabricated almost entirely in the steel mills where the work done on it can be accomplished in a much more efficient manner because of the availability of rigging for punching, riveting, welding and other fabricating operations.

Where the battledeck floor is used, it can be built of plates and I-beams on 2′ centers in such a way that three or four widths of plates may be shop-welded to the I-beam joists which support them and delivered to the job in sections with two-thirds of the welding already done. This would effect a cost saving in the welding and a time saving in the erection.

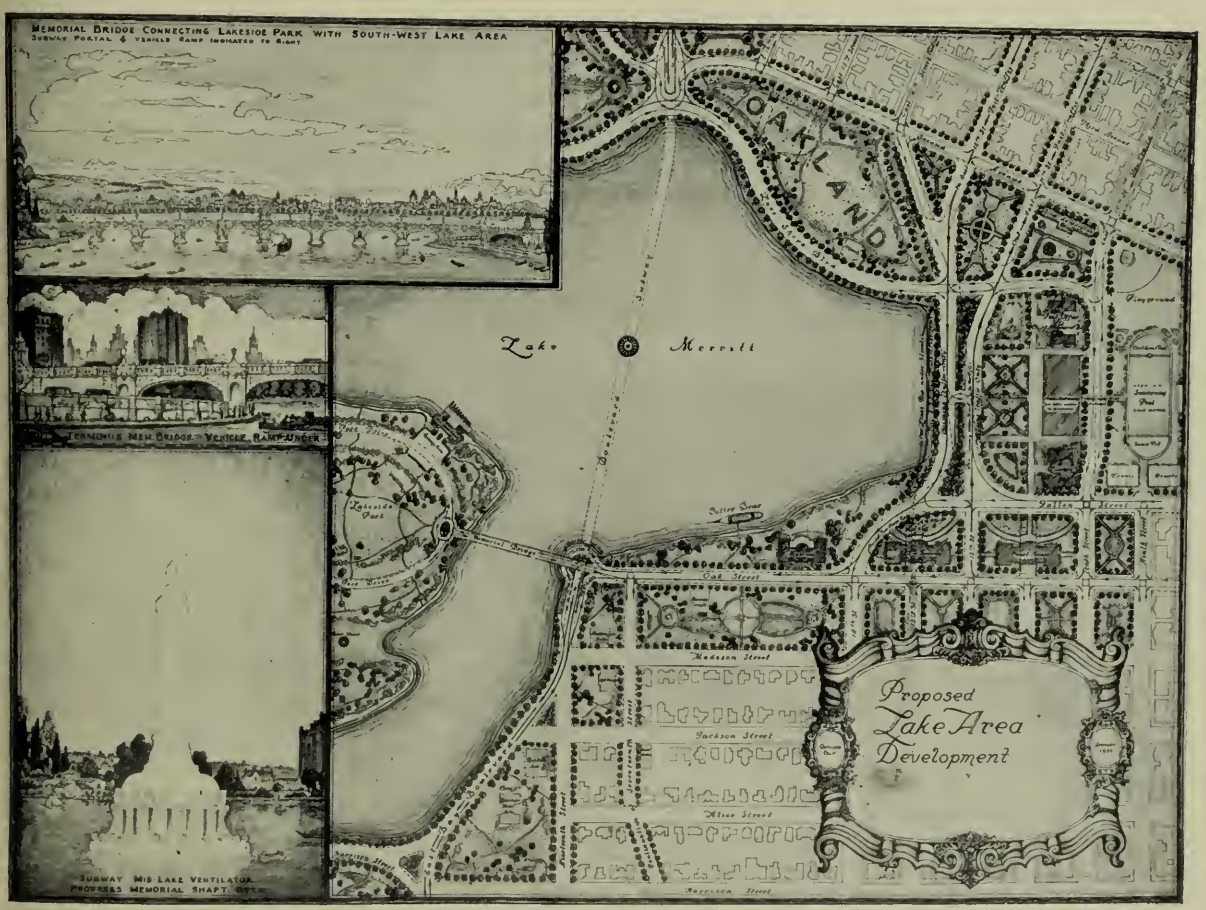
Where a metal floor system is used consisting of I-beam joists with Holorib, Mahon, Truscon or other steel roof decking inverted and laid on the top of the joists and filled with terrazzo, a still greater sav-

ing in cost of material and welding is effected as well as a great saving in erection time.

Since the wall construction is insulated to such a high degree, the loss of heat through the wall is reduced to just one-third of the normal loss. Since the windows are double-glazed, the loss of heat through them is reduced to one-half of the normal loss.

The average heat loss through wall and window is thereby reduced to approximately 41% of the heat loss which exists in popular fireproof construction.

These drastic reductions in heat losses make the use of electric heat possible.



SUGGESTION FOR DEVELOPMENT OF LAKE MERRITT AREA, OAKLAND, CALIFORNIA

Submitted by Maury I. Diggs and John Albert Marshall

FOR BETTER CITY PLANNING

by FRED'K. W. JONES

A NATION-WIDE study to promote "better planning of all communities for permanent human use as essential to modern civilization", has been started by the Committee on City and Regional Planning of the American Institute of Architects.

Finding that millions are wasted annually on ugly buildings, and that bad environment blights behavior, health and enjoyment of life, the Committee, as its initial task, is seeking an answer to the question: "Can character and individuality of cities and regions be consciously attained?"

Some cities, by their peculiar topography, flora and other natural features, have their appeal, regardless of a city plan, or man-made features—be they good or bad. Nature has given them the charm they possess. On the other hand, we see cities and towns that seem to cry out for a good city plan, better architecture and better landscaping. Many of these towns present sorry spectacles for want of a proper city plan. It takes time and a great amount of educational work to bring these communities to their senses. The people must be taught to appreciate the economic and social values of good city planning in all of its phases by the establishment of non-political city and regional planning commissions, supported by proper legal regulations with sufficient financial backing to enable them to function and accomplish definite results. We have some examples in California of charming cities due to city planning. We have examples too of architectural improvement due to efficient architectural control. We should have more.

Replies thus far received indicate a conflict of opinion, according to Charles H. Cheney of Los Angeles, chairman of the Committee. Farsighted, intelligent planning and careful building up of the morale of the district is cited as the best method by J. C. Nichols, Kansas City, Mo., member of the National Capital Park and Planning Commission.

Herbert U. Nelson of Chicago, executive secretary of the National Association of Real Estate Boards, questions the value of conscious striving for municipal beauty. Cities are composed of men and women working for better standards of living, and will continue to improve the quality of their development, Gardner S. Rogers of the Civic Development Department of the United States Chamber of Commerce declares. Others doubt whether American cities can have any well defined character.

"The original 'city beautiful' movement failed, or at least, did not succeed largely because it was concerned with surface good looks," says Mr. Nichols, developer of the Country Club District of Kansas City.

In cooperation with Mr. Cheney, the editor of THE ARCHITECT AND ENGINEER invited several San Francisco landscape architects to give their views on the subject. The following questions were propounded and the answers are given in the order named:

What is it that constitutes the individuality or charm of any particular city, community or region?

What are the particular places of greatest character and charm, in your opinion, in your state and why? What man-made improvements or regulations enhance them, or detract from them?

What practical steps of planning, architectural control, zoning, or improvement should be taken by cities, communities or regions to build up, maintain and enhance whatever of individuality, character and charm they may have, or to recapture what may have been lost?

JOHN W. GREGG, Landscape Architect, University of California, Berkeley.

1. The "individuality" or "charm",—

speaking generally—of any particular city, community or region, may be the result of a number of elements or conditions, being so composed by nature or man as to produce the qualities referred to. Topography, flora and other natural features and elements, with other man-made structures such as a good city plan, good architecture, good landscape architecture, together with the educational, social and business character of the people, may all compose to produce an "individuality" or "charm" for any particular city, community or region.

2. From a regional standpoint, California may be roughly divided into mountain, valley, desert and seashore areas, each possessing its own peculiar "individuality" or "charm" because of typical natural topography, flora and other allied features. The redwood grove areas in northern California, the high Sierra and mountain terrain and the desert areas are typical examples of natural "individuality" and "charm", not to be compared with one another. In this connection it can be very positively stated that *billboards* and other forms of *obnoxious* outdoor advertising are examples of man-made features which detract from that natural beauty and individuality. Poorly routed, graded and unlandscaped highways are other man-made elements which often destroy or detract from the natural beauties of the community or regions through which they pass. Poorly paved and laid out streets, together with a general lack of avenue or street tree planting, poor architecture in both home and public buildings, unattractive home grounds, no well-located and improved public parks and a lack of good zoning, including architectural regulations, are all conducive to a general unattractive city, town or community.

3. The people must be educated up to an appreciation of the economic and social values of good city planning in all of its phases by the establishment of non-political city and regional planning commissions, supported by proper legal regulations and with sufficient financial backing to enable them to function and accomplish definite results. City and town planning commissions, county or regional planning commissions, city, county and state park commissions, can, with carefully selected personnel, legal authority and financial support, accomplish much to rescue, preserve and improve individuality and beauty in all their detailed and general aspects.

EMERSON KNIGHT,
Landscape Architect, San Francisco:

1—The charm of any particular city, community or region rests in large measure upon its site, topography, climate and flora. When the site is appropriately treated with a noble plan and developed architecturally in a manner as masterful as that of the Egyptians, Greeks and Romans, the Medieval and Renaissance builders and in rare instances by modern man, the original beauty is greatly enhanced. It is the function of architects and landscape architects together with painters and sculptors—to so direct town planning, the erection of edifices and planting in the future, that all will fittingly grace their environment in a true union with Nature.

2—Charm in California towns resides partly in the beauty with which Nature has endowed them but is given its peculiar flavor quite as much by what man has added through building art and finally by those things which arise—imparted by the spirit of its people.

San Francisco's charm, for example, depends much upon its hills, its harbor and its colorfully historic background; Carmel, for its rich blending of sea and skies, with its pines and sculptured cypresses; Santa Barbara for its oakclad hills, ruddy mountains, shoreline and Channel Islands; San Diego and La Jolla for their climate, bays and beaches; Belvedere and Sausalito for clustering hillside homes commanding a far-flung Bay; Auburn, Columbia and Grass Valley, as recollections of old mining towns with a romantic past. Most of these towns, together with others of like beauty—are injured to some degree by poor general plans or weak architecture. Yet the original charm is in part sustained by the presence of historic homes, missions, mills or forts, of good functional design and integrity of construction and planting. Some excellent

newer architecture graces most of these centers. In Santa Barbara, for instance, are the Paseo with its patio and studios, the City Hall, Public Library, schools, clubs and masterfully designed homes by our ablest architects—all adding to the natural charm of a lovely town. Palos Verdes represents the best town plan, architecture and landscape planting scheme—designed, controlled and treated as a whole.

3—Of prime importance in planning architectural control is the creation of competent City and Regional Planning commissions for the purpose of preparing careful, thorough, complete plans and zoning laws, all aiming toward the enhancement of the natural charm of the sites involved. Essential, too, is a Fine Arts Commission for each community or with statewide powers. The designs of all structures or schemes of importance must be carefully weighed and only admirable, sound plans accepted by such body. We have severe proof of the need of such a commission when we examine the treatment of the summit of Telegraph Hill, our bridges, tunnel portals, countless buildings of all types, service stations and worthless statues. Old landmarks of historic charm should be preserved and at times, thoughtfully reconstructed and replanted to finally recapture the spirit of former times. In order to function well, the City or Regional Planning Commissions should include,—an architect, a city or regional planning architect, a landscape architect , a sculptor, painter, engineer and attorney. The Fine Arts Commission should include like members with the exception of an attorney. In order to develop a broad comprehension of the work, our general public must be constantly stimulated by right aesthetic influences beginning with childhood,—not only in music which we now have abundantly—but also in the finer expressions of city planning, architecture and landscape design, together with all the creative arts and handcrafts. Only in this manner will public taste improve and rise to that high condition that can awaken an America more nearly approaching perfection than we have yet conceived.

HORACE GEORGE COTTON,
Landscape Architect, San Francisco:

1—The individuality and charm of cities, communities or local regions are so often composed of such intangible and subtle elements that it is often difficult to segregate the reasons why a place is attractive and to pin one's impressions down in black and white. People like to visit Rome especially for its wonderful architecture while they go to Switzerland for the rugged mountain scenery. The natural setting, the climate, the people themselves, an historical aura all add to the renown of certain communities. There is also that intangible essence of charm and quaintness which some little towns on the Continent possess and even though our feelings toward them may be indefinable we like to return.

People are usually impressed most of all, however, by well kept streets, good architecture and a beautifully laid out city plan including parks, boulevards and private gardens protected by proper restrictions. Paris is a good example of a beautiful and interesting city. It is evident that architects and their associated artists must have had considerable authority during the reigns of the Louis and since that time to guide the development along artistic lines.

2—There are many small spots in California of unusual interest. The quaint old mining towns of Calaveras County have a certain charm which cannot be duplicated. Jenner-by-the-sea has the atmosphere of an Old World coastal town that has developed to an age of picturesqueness through isolation and a rugged environment. Carmel breaths unsophistication, the languid and leisure atmosphere of the artist, romance behind garden walls, and a complete indifference to the busy lives of more ambitious neighbors nearby. Its serene and complacent life is refreshing as well as interesting.

But for character and charm in its fullest meaning there is no community in California that can equal San Francisco Bay. Second largest natural harbor in the world, it stands as one of nature's masterpieces. A view of this wonderful panorama from the

hills back of Berkeley on many evenings rewards the lover of beauty with a never-to-be-forgotten sight. A gorgeous sun sinks slowly through the Golden Gate with the softly changing tints of the gold and flame colored clouds drifting over the purple waters of the island studded bay. The enveloping hills outlining the panorama on all sides, a sea of lights flooding the human plane below, flashing beacons in the distance guiding the mariner to a night's repose, awakens one's conscience to a realization of a sympathetic union and friendly cooperation between man and nature. But a few years ago there was hardly a house on that vast plane which now displays a solid mass of homes. As civilization follows the Cross, so architecture follows civilization and this exposition of human effort is but a silent testimonial of the vast influence of the architect and his handiwork.

No group of cities in the west contain such an outstanding array of architectural masterpieces as the Bay Region. The groups of buildings at the Universities of California and Stanford, the Civic Center of San Francisco, the Legion of Honor Palace, and the stately and magnificent monuments to commerce in the heart of the city, reflect the tremendous development and artistic enlightenment of its people. An air view of the city reveals an astonishing number of parks and playgrounds which allow fresh air and serve as beautiful oases for relaxation in thickly populated areas. The waterfront, where the world meets his neighbor, Chinatown, the beaches, interesting drives, and general accessibility to most of California's natural beauty spots all merge to create as fascinating a combination of human interests as can be found anywhere.

3—What every city needs as years and changing conditions alter its growth is a cautious and watchful guidance by a carefully selected group of non-political, broad-minded and highly trained men, such as architects, engineers and landscape architects, with the power to regulate civic and, to a limited extent, private development. Without the moderating hand of a body of this nature the physical and aesthetic assets of many cities are sadly debauched.

A good example of what can be done under adverse circumstances is the development of the city of Chicago. From a series of mud flats surrounding a drainage canal, and with no natural beauty of any kind, this city through its City Planning Commission and Park Commission has developed one of the most outstanding communities in art, architecture and landscape beauty of any city in the nation.

SAN FRANCISCO AT NIGHT FROM TELEGRAPH HILL
Photo by Preston Kendall

THE MODERN KITCHEN SPECIALIST

by RAY B. COX

SUCCESSFUL architects of the early centuries were not only master craftsmen but were of great business experience and managing ability. They knew the process of the artisans, the sources and nature of materials and the rules of good design. These they coordinated and thereby achieved their success.

The modern architect has much the same problem but with many other elements to mould into successful work. By the same token he has increased facilities, and cooperative efforts of others with which to work. The materials are endless; in fact, only comparable to the list of problems. This age has also brought to the aid of the architect a host of artisans, technicians, experts, engineers, draftsmen, mechanics, contractors, manufacturers, scientists, and others; all of whose work must be judged and coordinated. For that reason, architects are seeking the services and counsel of "Home Economists", and "Kitchen Designers".

A Kitchen of Modern Style

It may be safely said about the kitchen problems, as in other problems of design, that no one thing can be all important in a perfect plan. Successful planning is a series of compromises. When considering the plan of a home or apartment, one can neither allow over-emphasis, nor give outstanding prominence to any one element. Harmony of the whole plan is alone successful. Each element must play team work, just as in football, if success is obtained. Problems are many and always specific, although not always so recognized. Only careful analysis and study will bring out each problem and its answer.

Kitchens have seemed to remain for many years just a general problem with almost a stereotyped solution. It usually sufficed to provide some place within a room for a sink, a stove, cupboards, and other "odds and ends" to suit the designer's fancy. Many times the designer was the carpenter on the job. There are those who would over emphasize the importance of the kitchen to the detriment of other elements in the plan. Of course, there have been many who have successfully accomplished the proper or almost perfect plan, where the elements are all balanced as to relative importance and each detail carefully thought out. To them comes the satisfaction of success.

A Large Complete Kitchen

This is the day of the specialist and those who plan must be experts. Experts are the outgrowth of experience and study. Home efficiency is primarily started in the kitchen, the bathroom, the laundry, or the basement, for these are the places where work is being done. Other rooms of the house are reserved for comfort and pleasure.

There are kitchens of many types that should be handled in the work of a Home Efficiency Department Plan Service. Some are as follows:

Apartment Kitchens
- Bachelor type
- Combination Dinette and Kitchen
- Buffet type

Residential Kitchens (no servants)
- Buffet type (small)
- Combination kitchen and pantry

A Kitchen Planned to Save Steps

Combination kitchen, breakfast nook
Residential kitchens (with servants)
Kitchens only (large)
Kitchens with butler pantry only

Kitchen and Breakfast Nook Layout

Kitchens with pantry, servants dining quarters and storage
Club Kitchens
Hotel Kitchens
School Kitchens
For Instruction
For General Use
Experimental Kitchens
Cabin Kitchens
Auto Court Kitchens
Restaurant Kitchens
Cafeteria Kitchens
Church Kitchens
Recreational Center Kitchens

Conditions Affecting Design

Use: The type of use to which a kitchen is going to be put must first be known; that is, shall it be for a home, apartment, club or one of several other types.

Size and Shape: It is important to know whether these conditions are flexible. It should be possible to slightly alter both size and shape.

Exits and Entrances: Too many doors are a serious handicap. Two or three doors should be the maximum number for the average kitchen.

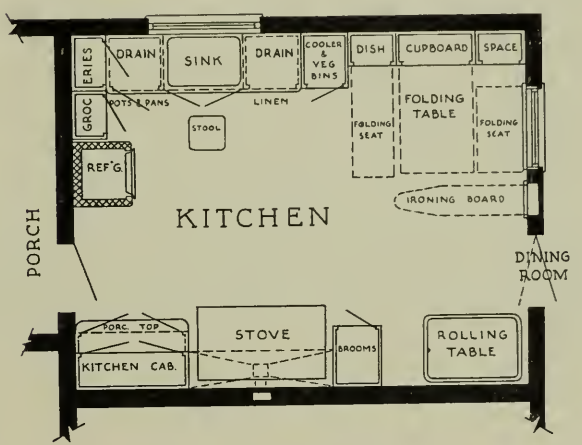
Lots of Drawer and Shelf Room

Light and Ventilation: State Housing and Building Laws usually govern these conditions and it is important that they be carefully considered.

Location in Plan: The relative position to other rooms of the building will alter conditions. It has been observed very many times that space left over, after all other rooms are provided for, is devoted to the kitchen which may be misshapen and inadequate. The kitchen should be an integral part of the whole balanced plan.

Fixed Conditions: All conditions should remain as flexible as possible during the preliminary stage of planning and layout. A stubborn attitude in any or some conditions may defeat the harmony of the whole plan. It has always been the advice of architects to their clients to avoid fixed conditions or hard and fast rules. It is well that a designer keep this in mind, too.

Type of Equipment: While planning,



Plan for Ideal Kitchen

consideration should constantly be given to cost and location of all equipment. Choice should be made between the many different items offered in the market. Some of the following questions must be decided:

Is the cabinet equipment to be carpenter built, mill built, or are standardized cabinets to be used?

Is it the intention to use an electric or gas range?

Is a flat rim, tiled-in sink, an electric dishwasher, or some other type of fixture, contemplated?

Is it the intention to use mechanical ice refrigeration, or none at all?

Where are the work and storage centers to be placed?

What are the lighting facilities to be?

What provision is to be made for the disposal of garbage?

How is the water heating provision going to be handled?

Is it intended to make provision for an electric ventilator?

What provisions should be made for special mechanical conveniences that may be used; such as ironing machines, electric mixing machines, food choppers, iron holders, washing machines, and other electrical contrivances?

The plan should be kept in a flexible condition until final consideration of all the above has been given and definite decisions made. Thought must be given to the kind, the cost and the storage of various parts required by any of the above facilities that may be used. The expert designer must necessarily be familiar with the advantages and cost of all equipment and material on the market. Since these have grown to such an extent it is almost necessary that one be a specialist in this field.

Process of Work: The work which is to be carried on in the kitchen is very important and the processes must be understood by the designer. Adequate provision must be made for every thing as well as considering the relative position of each piece of equipment.

Cabinet Equipment: Cabinets make up such a large part of the equipment that goes into every kitchen that careful consideration should be given to them. Just as gas and electricity have replaced coal, ashes and ice, so have portable furniture and cupboards been replaced by standard factory built units. These units are also very rapidly replacing the old style hand made cabinets of yesteryear.

Miscellaneous Items: There are many other things still to consider before a kitchen is satisfactorily planned, such as floor coverings; wall coverings if any; color schemes, hardware; tile walls and drain; chronium plating for all fittings; lip doors for the cabinets; bins of metal or wood; porcelain table tops; work center; ant proof cooler; vegetable bins; broom closets; spice cabinets; rolling service tables; step ladder stool; soap dishes; sink wings; shades; curtains; lid racks; pot and pan storage.

Truly, the art of kitchen planning requires the same thought and study that must be given to other important features, with which the architect deals in his chosen field. The solution of the many problems is reached by formulas similar to those used in the solution of other engineering questions.

KITCHEN WITH STANDARD UNIT EQUIPMENT

Chas. G. Adams, Landscape Architect

WHITTIER UNION HIGH SCHOOL, WHITTIER, CALIFORNIA

Myron Hunt and H. C. Chambers, Architects

WHITTIER UNION HIGH SCHOOL

by CHAS. GIBBS ADAMS

AN institution whose buildings, for convenience, efficiency, completeness and beauty, point the way for others of its kind, is the Whittier Union High school, in "The Friendly Town". The school was designed by Myron Hunt and H. C. Chambers, A.I.A., of Los Angeles.

Beside the usual school rooms and laboratories this plant is distinguished by such features as a complete cafeteria, operated by the students, a commodious swimming pool and dressing rooms, and a stately assembly hall with stage and pipe organ.

In designing the grounds the architects had the unusual scope of three city blocks for a setting. This gave opportunity for broad lawns and generous shrubbery masses, as well as a picnic grove equipped as a lunching place for the students, a complete recreation field with grandstands, and even a bit of fig and orange orchard.

Chas. G. Adams, Landscape Architect

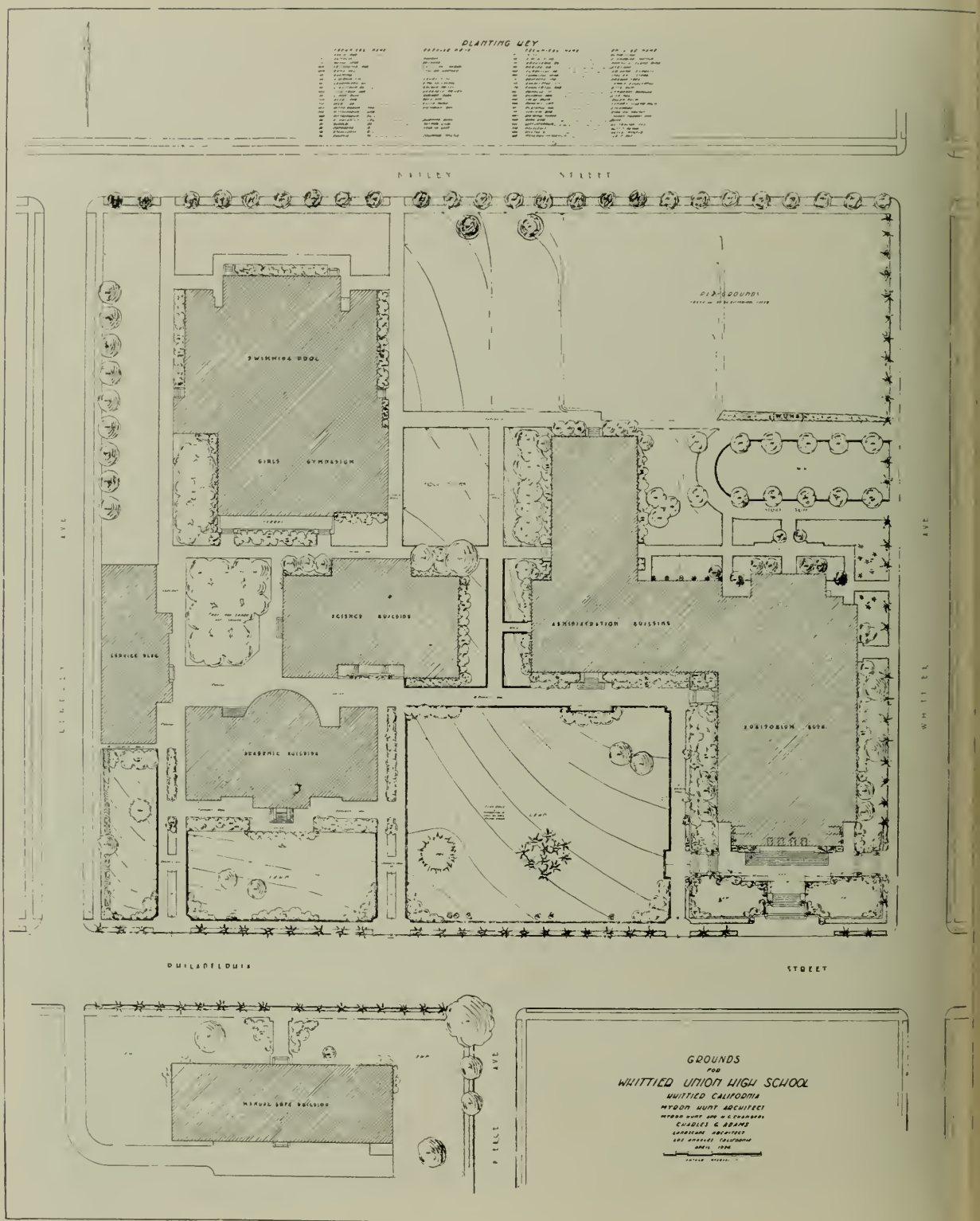
AUDITORIUM, WHITTIER UNION HIGH SCHOOL, WHITTIER, CALIFORNIA

MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS

Chas. G. Adams, Landscape Architect

AUDITORIUM, WHITTIER UNION HIGH SCHOOL, WHITTIER, CALIFORNIA

MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS



Chas. G. Adams, Landscape Architect

PLOT PLAN, WHITTIER UNION HIGH SCHOOL, WHITTIER, CALIFORNIA

MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS

Chas. G. Adams, Landscape Architect

WHITTIER UNION HIGH SCHOOL, WHITTIER, CALIFORNIA

MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS

A PAGE OF APARTMENT HOUSE FEATURES

Light courts
Commodious lobby
Cross ventilation
Minimum private halls
Outside exposure
Convenient door swings
Unbroken wall spaces
Adequate number of large closets
Soundproof construction
Fireproof construction
Friction door hinges
Servidors
Ventilator doors
Roll screens
Rubbish chutes
Safety locks above knobs
Weather strips
Large windows
Miniature golf course
Putting greens
Swimming pool
Playground on roof; safety features
Tennis courts
Wading pool
Garden seats
Fountains
Flowers
Awnings
Parasols
Rustic nooks
Window boxes
Concealed radiation
Central cleaning system
Incinerator
Bins for fireplace wood
Electric refrigeration
Self-leveling elevators
Circulating ice water
Water softener
Automatic door checks
Temperature control
Radio outlets
Gas or electric ranges
Colorful walls and trim
Cork, linoleum or rubber floors
Automatic dishwasher
Stainless sinks
Laundry tub
Built-in ironing board
Built-in table
Built-in bottle opener
Kitchen cabinet
Dumbwaiter
Color tile
Shower
Enclosed toilet
Chair over toilet seat
Silently flushed toilets
Dental lavatory
Double medicine cabinets
De luxe mirrors
Hot water bag hooks
Convenient towel racks
Recessed tissue holder
Electric clocks
Casement or double-hung windows
Electric base plugs
Plank floors
Floors of cork, linoleum, rubber
Wall safe
Full-length mirrors
Phone connection in each room
Wood-burning fireplace
Fireplace (gas log)
Arched doors
Built-in book cases
Modern facilities for hanging pictures
Decorative lighting fixtures
Built-in drawers
Shoe racks
Hat stands
Built-in hangers
Tie racks
Cellarette closets
Lighted closets
Special door locks

"OR EQUAL" AGAIN

by W. W. BEACH in Pencil Points

THE question of whether or not architects are justified in making use of an "or equal" stipulation in their specifications for the apparent purpose of avoiding discrimination, by thus permitting contractors a slight latitude in the selection of materials, is probably one that will not down so long as specifications are written.

Speakers have spoken and writers have written upon this subject as voluminously and perhaps as exhaustively as upon any other phase of specification writing, but it may be noted that all, or nearly all, speak or write with a certain degree of bias. They are quite pointedly either for or against the use of the two little words. For this reason it may be worth while to formulate a sort of resume of the subject in as open-minded a manner as possible in order that younger members of the profession may not acquire too firm an opinion either one way or the other.

In the first place, the permission granted by the modifying clause is so frequently made use of by many of the best architects that it cannot be successfully contended either that "It is a poor attempt on the part of the specification writer to protect client against monopoly" or that "It shows that the architect himself is not sure of exactly what he wants," as one objector is reported to have stated. Such statements tend to lessen the respect of the novice (and the layman, if he should happen to see them) for high-class practitioners to whom they might be considered applicable, and are most unjust. It may as well be alleged that architects who write exclusive specifications (eliminating all mention of "or equal) are actuated by a desire to escape the importunities of competing salesmen, either think they know all that is to be known about construction materials and methods or are too indolent-minded to want to add to their store of knowledge—just can't be bothered. Let us avoid both incriminations and strive to be as fair as possible in consideration of the text of this discourse.

In refutation of the two assertions above quoted, one can safely say that the insertion of "or approved equal" after a definite specification of some material may prove a very excellent method of preventing a contractor's passing on to a client an overcharge made by a manufacturer or vendor. Likewise, it may be a means of securing exactly what an architect wants from any one of several concerns, equally capable of supplying it—*and at a competitive price.*

It is quite true that "the architect or engineer is a specialist who is supposed to have all the technical knowledge required to build and equip a building to meet the requirements for which it is to be built"; but, unfortunately, this implies an omniscience quite beyond the limitations of any mortal man. Every architect is a student in his profession so long as his active practice lasts. New materials and improved combinations of materials, revised methods of construction and installation are constantly being offered for his attention. He may specify the most appropriate thing within his sphere of knowledge today, then have his attention called to something much better during the months that may elapse between the time the specification was written and that of the incorporation of the original item in the finished structure.

It is no doubt "unfair to the contractor, manufacturer and (possibly) to the client to specify high grade, high priced material for a job when it has already been settled that medium grade or the cheapest grade of material must be used." But it is not clear that this has any direct bearing on

the question, nor is it probable that a reputable architect would be so careless. It is not easy to see how a client, having impressed upon the architect the financial limitations that would subtend cheap or mediocre materials, could be misled into expecting something much better, but certainly any chance of the resultant disappointment should be effectually guarded against.

It is not necessarily true that "an architect need seldom fear that makers of high grade materials will attempt extortion under the protection of an exclusive specification" nor that "it is only when he has to use the cheaper grades that he has to watch his step," as naively asserted by one conscientious objector. The writer has experienced four distinct attempts of this sort by concerns of the highest class. One gave as its reason that the original quotation had not been guaranteed against general market fluctuations. Another ingeniously set forth that their price should not have been quoted to the particular contractor who happened to be low bidder, because he was not *persona grata* with them. A third vouchsafed no further excuse than that its representative must have made a mistake as his price was not authorized. The fourth was a plain case of attempted gouging by one of the largest of building material combines and was evaded only by close cooperation between architect and contractor.

A distinct trend of the times is a closer affiliation between those producers who recognize a community of interest in their operations. This tendency includes the elimination to such extent as is found feasible of the demoralizing influence of price-cutting. Whether this be effected by combining ownership, by group organization or by secret "gentlemen's agreements" is not directly our concern; we are interested in discovering how efficiency of production and marketing and the elimination of waste thus brought about are reflected in the cost to the consumer. We hear more and more of the observance of rules of ethics by vendors of like commodities but we find that these "ethics" have solely to do with the dealings of said vendors between themselves, the direct customer and the ultimate consumer not entering into the equation.

Although it may be assumed that "high grade materials of all kinds have an established market value," yet it cannot be so positively stated that there is no fluctuation in the market prices of such materials. As has been elsewhere said, there are list prices and market prices and special introductory discounts and volume-of-business discounts and special reduced prices necessary to secure the business (sometimes in spite of gentlemen's agreements and trade ethics to the contrary). In view of the many varieties of secret discounts to favored buyers, it is seldom that an architect knows just what a large contractor actually pays for items purchased in considerable quantity, either for a particular job or through the run of a year's business.

Now, if such a contractor, by virtue of such volume-of-business discounts or because of discounts or because of ownership in a source of supply, or for any other known or unknown reason, is willing to allow the saving thereby effected to be reflected in the price to the owner, would it not appear to be stiff-necked procedure on the part of such owner's agent to refuse to permit such saving, provided the material so offered is equal to that specified or the difference in quality is duly compensated for?

The architect must continually bear in mind that all competitive-bidding contracting is a form of gambling in which the contestants wager certain time and expense against those of the other fellow. There are no ethics in it unless all the bidders can get together and agree on certain things prior to the opening of bids. Inasmuch as no architects or owners approve of such proceedings, it is obvious that they cannot hope to benefit by the application of such "ethics". In all cases where the bidding is as truly competitive as the architect assumes it to be, the successful contractor, if experienced, has a pretty well defined idea of what he is going to do in the carrying out of the terms of the contract. The gamble he took had to do with other things, such

as not knowing what the other fellow proposed to do, what mistakes his own and other estimators might have made, what the weather and other accidents may cost him, and so on.

Further, it may be observed that standard forms of building contracts in vogue carry the universal implication (backed by the filing of a surety bond) that every contractor will bear watching, without which he cannot be expected to carry out the terms of the contract. Because of lack of relish of this insinuation and the character of competition forced upon them, many conscientious builders shun architects' offices and seek to build up a practice of cost-plus work, based upon honest business principles. However, as most architects are committed to the competitive-bidding method, it is of this we must treat. We must, therefore,, recognize the fact that it offers every inducement to sharp and dishonest practice and that is what one must expect to deal with, either in general or subcontractor, or both. Fortunate indeed is that architect who finds every contractor on a given work diligently intent upon giving the owner full value for every dollar invested. The rarity of such experience has led to the interposition of the building superintendent between owner and contractors, either the architect himself or his employee acting in such capacity.

Now, to the owner, the duties and responsibilities of such office are exceedingly plain. He, the superintendent, is there to see that the contractor does what it required of him—that he slips nothing over. In this, he must be a sleepless Sherlock Holmes of perfect type, sans alibi of any kind. On the other hand, there are contractors who insist that they have yet to find a specification that could not be circumvented—that they could "throw a dog through most of 'em." Obviously, when such a contractor and the ideal superintendent are pitted against each other, a due regard for prevention of abuse of the "or equal" clauses are the least of the latter's worries. The attempted use of substitutes confronts him much more plainly than do any number of other potential possibilities in the way of evasions and deliberate ignorings of contract terms.

Frequently an owner wants a cheap job, rather than a good one, in which case it is actually incumbent upon the architect to permit bidders to select the lowest-priced of several items, any one of which would fill the bill. One writer states that "There is no such thing as absolute equality in materials or apparatus of two different makes." This is somewhat dogmatic. Most of us are more likely to subscribe to the opinion that there are several makes of innumerable items on the market in which the variation in degree of excellence is infinitesimal. There seems to be no particular reason that an architect should discriminate for or against any of such, except because of some individual experience.

Therefore, if one is minded to mention some proprietary product as a standard, permitting the substitution of something "equal," there is apparently no sound reason for not doing so. He should, however, be careful to safeguard the substitution by retaining to himself all right to adjudge said equality. This is done most easily by naming only one criterion. If more than one is named, it is best to mention three or more, in which case, the "or equal" proviso appears superfluous. If two are named, it is obvious that the cheaper of the two is the actual standard, if it should happen that there is a difference.

In any event, it is well to fortify oneself by incorporating these two clauses in one's general conditions:

ITEMS OF SPECIAL MAKE. Whenever an article or class of material is specified by trade name or the name of a particular maker or by catalog reference, it is intended to mean either the article so described or any similar article which, in the judgment of the architect, is equal thereto in every respect.

SUBSTITUTIONS of items as specified in the foregoing paragraph may only be made after a written order from the architect has been obtained well in advance of the time when such item will be needed.

AT LAST—THE ARCHITECTURAL ENSEMBLE

HERE are a few of the high lights of an informal talk on Modernism recently given by Lucien Lebandt, Director of the California School of Design, before the Northern California Chapter, American Institute of Architects:

"To understand the modern movement in architecture we must go back at least fifty years, to be more exact to 1878, for unquestionably the fore-runner of what is today termed "m o d e r n architecture" can be traced directly to the influence of two notable engineering achievements: the erection of the Crystal Palace in London in 1878 and of the Eiffel Tower in Paris in 1889. In fact when the Eiffel Tower was built it was looked upon in the nature of an exposition amusement attraction, and probably would have remained so if the City of New York had not been forced to the necessity, on account of fabulous land values, of resorting to very tall structures and the Eiffel Tower proved to be the inspiration.

"The impetus of the movement which has produced the magnificent buildings of the past few years, is due to two causes—first, the use of steel in the super-structures, and second, the spectrum analysis, and it is to the latter that we owe the great beauty of modern architecture, for while structural engineers were progressing by leaps and bounds in evolving scientific principles of giant steel frame skyscrapers, the architects were still using the ornamentations which belonged to a past age.

"The artists of the decadence, having nothing else to give, became merely commercial, and instead of hewing true to the line of creative art, started a war for commercial supremacy, consequently creative art in all lines was relegated to the discard, and they took for their slogan the words of Rockefeller—"Give the people what they want."

"For awhile we remained in this state of stagnation so to speak, and then the next step in the evolution came in the perfection of cement, which was an old building material, but became new again when we understood the principles of reinforcement, so you will note that the engineers were still going ahead, but up to 1925 most of the architects were still using as their theme of decoration the features of the past. There were a few exceptions, among them Frank Lloyd Wright of America and Auguste Perret of France. Eventually, however, through the application of the principles of spectrum analysis by the impressionistic painters, a new school of artists sprang up, and after the evolution of a long period, are today able to create the proper architectural decorations to conform with the magnificent super-structures of the engineers and liberate our buildings and homes of the attributes of bygone days and still remain true to tradition. There is no doubt that the various fields a study of the spectrum analysis compelled the artist to explore, led us to emerge from the wilderness of commercialism and to actually do creative work, for before its discovery color was an art, while today it is an exact science. It is a science that can be learned, it does not wait on inspiration. After Chevreul had enunciated his theories of simultaneous contrasts and the laws of the complimentaries, painting became scientific—Seurat, Van Gogh and a number of others, and so from being mere imitators, painters turned to creation, true composition was reborn—Cezanne. Color regulated the division of space (cubism)—one quantity of color is equal

to another of the same intensity. Nature becomes an incentive, but not a goal. When Cezanne was asked why he did not reproduce faithfully the object he had in front of him (conversation with Joachim Gasquet) he replied by asking his interlocutor —"Can you imitate the sun?" Of course not. So if one wants to represent the sun and is unable to do so, he must replace it by something else—what? By that which the artist conceives as his idea of strength, force, immensity and luminosity, according to the medium he is using. Then art became synthetic, emotional and creative. Constructiveism is the dominating new power. Each artist of the young movement tries out his own conception of things and it is this that has produced a group of artists and artisans to work with the architects and engineers to produce these magnificent modern buildings—we might liken this group to another Guild System.

"The next step in this new order of things was when Guillaume Appollinaire coined his happy sentence to explain to a bewildered public what the artist meant by such incomprehensible expression — "It is a painting, yes, but it is also something else —it is a Color Ensemble" (futurist, cubist, purist, etc.) This very famous sentence has influenced all arts and crafts, for any perfect combination is now termed "an ensemble", and thus we have the dress ensemble followed by the decorative ensemble, and now we have come to the biggest, most far-reaching and important of all—"Architectural Ensemble", which took longer to come into being because it is more colossal and consequently more difficult to experiment with, but the millenium in that great field has arrived—or is now practically upon us.

"The ground is now so fertile for the application of these various experiments that an architect of genius can make good use of the talent that surrounds him. A few attempts have been made on commercial and industrial buildings to carry out this trend of co-ordination—the best examples are the latter, as regards the former there is still a certain hesitation, but as the orders of the past are being slowly replaced by more modern decorations, we still feel that they are not part of the construction; that the artist has not been consulted soon enough—it is coming so we may well term this the period of transition. To do real creative work we must have a true alliance between the architect, engineer and the artists, and it is being done in Europe and in France today. Then shall blossom forth the genuine creative spirit of our day—the arts will then have regained their dignity. These groups of artists will be able to better serve the public, NOT by giving the people what they want, as was the old slogan, but what they need.

Julius Cindrich in Camera Craft

ARCHITECTURAL STUDY

The ARCHITECT'S VIEWPOINT

¶ *What to Write About (?)*

¶ *Architect and Engineer in Closer Alliance*

¶ *Portland Architects Honor Distinguished Firm*

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WE sit tapping our 2B pencil on the desk, with a worried look. What to write? There is no subject in this profession that has not already been covered thoroughly and efficiently. We re-read the eloquent remarks of this column's last contributor to see what he has found to speak about. We close the book—read the name on the cover, "THE ARCHITECT AND ENGINEER". We cogitate. Is all well with these fellows, the architects and the engineers? Are they as happily wedded in fact as they are here in large print? If not, they should be.

Not many years ago the architects felt that most engineers did not pay much attention to esthetic values in designing structures. A lack of beauty was evident in the hard, unfriendly lines of most of the bridges, docks, tank towers, etc. On the other hand, these same engineers thought, and properly, that most architects were impractical, were uneconomical in planning, and over exuberant in decoration, and that they had little or no feeling for structure.

Fortunately, at the present time, this lack of teamwork on the part of the architect and the engineer is less prevalent. We have some recent outstanding examples in the East, where engineer and architect have worked harmoniously on bridge design, with eminent results.

The modern trend in building has been a great influence toward the frank expression of structure in architectural design. More architects talk sensibly about design at present than at any period since the Golden Age in Greece. The architect of today refers less often to his volume of "One Hundred Consoles and Fifty Cartouches", than his predecessors were wont to do.

How about the engineers? Let us pray that since the architects are becoming practical minded, the engineers' interests will not be "arty". We do not believe they will, but the writer knows of one case when this very thing happened.

At a banquet given to honor some foreign engineer, which was attended by men of the entire construction industry, the writer sat at a table with a prominent structural engineer. Just to start a discussion, the statement was made that the new skyscrapers were certainly an advance, in that they expressed structure more frankly than the older types. The engineer said, "Oh, I prefer a building with a nice big cornice". This engineer's attitude was not surprising, for he seldom expresses the true characteristics

of materials in his designs. His concrete work is sharp and "line-y" instead of plastic, as it should be, and the forms are complicated and extremely difficult to fabricate.

Of course this man is but one. However, we have the case of the St. Johns bridge at Portland, where the engineers became artistically minded to the detriment of their design. Apparently structure meant less to them than futile Gothic arches, pinnacles and meaningless forms.

The men in the architectural and engineering professions should get together occasionally—once or twice a year—for better understanding of the special problems of each, and for the interchange of ideas.

* * *

THE conditions under which professional men practice today can be greatly improved, but were it not for the unflagging efforts and high ideals of some of their predecessors, what might the situation be? God forbid! It is good for the present day men to pause occasionally and pay respect, in some fitting way, to those men who have helped to make ours a better occupation.

The Oregon Chapter, American Institute of Architects, did this very thing recently, when they placed a tablet on a Portland building honoring the firm of Whidden and Lewis, Architects. William Whidden and Ion Lewis were at one time employed by the firm of McKim, Meade and White. They came to Portland to supervise the construction of the Portland Hotel, which is now an old landmark. Upon completion of this building, these two men formed a partnership and remained in Portland for the practice of architecture. Theirs was the leading firm of architects in Portland for forty years, and during the entire period of their practice, they upheld the highest principles and ethics of the profession.

The Portland architects, wishing to express, in some way, their regard for the work of Whidden and Lewis, placed a bronze tablet on the City Hall, one of the earlier and best examples of the firm's work. On the tablet are bas relief portraits of both men, together with a few words honoring them for their ideals and achievements.

When Mr. William Whidden died, about two years ago, the architects of Portland lost a noble pioneer. Mr. Ion Lewis sent to the Oregon Chapter, his modest, but sincere thanks for the honor bestowed on his firm. An impression has been left on Portland by these men. Many of the present practitioners were once employed by Whidden and Lewis, and the conduct of the work of the older firm has guided that of these younger men. We are indeed grateful for the high ideals of Whidden and Lewis.

* * *

AN article in the November issue of this magazine told of the Ion Lewis Scholarship. Mr. Lewis has deeded property to the University of Oregon, the income, which amounts to over two thousand dollars annually, to be used for a travelling scholarship in architecture, or for providing training for some architectural student, who otherwise could not afford it. This scholarship should prove to be wonderful help to architectural education in the state.

HAROLD W. DOTY, A.I.A.

EDITORIAL CHAT

THE American Institute of Architects has begun an intensive study of better city planning and Charles H. Cheney has been commissioned with the laborious task of obtaining the views of professional and civic leaders throughout the country on the subject of character and individuality of cities and regions.

Mr. Cheney writes that the replies will be made public during the winter and will be published in various magazines and newspapers throughout the country, including THE ARCHITECT AND ENGINEER. Three interesting local views are printed elsewhere in this issue. A final report will be completed in the spring to the collaborating bodies, with suggestions for action that will conserve and promote individuality and character in the cities and regions of the country.

In the opinion of this magazine no man-made feature has become more offensive to the people of today than the bill-board and other out-door advertising matter. Day and night we are flaunted with these unsightly structures—along the highways, in vacant city lots and from the roofs of private buildings. There must be a remedy for this condition, and the American Institute of Architects should be the one to offer the solution.

* * *

THE American Institute of Architects, through its committees and Chapters, is planning to work with other groups in promoting business recovery and in co-ordinating activity in the building industry. William Ludlow, appointed chairman of the Institute's Committee on Industrial Relations, for 1930-31, announced recently that his committee had made proposals of co-operation to all trade associations within the industry.

The Chicago Chapter will form a committee to study conditions in the building industry. Establishment of a Building Congress is proposed. The Chicago Chapter plans to take up probable building conditions in 1931 with the Chamber of Commerce, the Producers' Council, and other bodies.

"Only by the complete organization of every division of the building industry can internal conditions be corrected," Mr. Ludlow who is also vice president of the New York Building Congress, declares. "Reciprocal relations among these divisions must be established. Solidarity is needed to bring about prosperity. No one division or individual member thereof can make adequate profits, and experience permanent stability unless all other divisions are equally fortunate.

"The American Institute of Architects recognizes the necessity of a closer working association between architects and every component of the building industry. To attain this end the Committee on Industrial Relations was organized. This committee has invited all trade associations within the industry to cooperate with it in developing a better understanding of the true functions of each, and of trade practices that will improve contractual relations of every kind."

A. T. North, a member of the committee, said that many architects are not earning an adequate profit. "This is the result to some extent of the lack of profits in nearly every other branch of the building industry, and largely because of a lack of general knowledge of the functions of the architect, the value of his services and the cost of producing plans and specifications and the supervision of work.

"Misunderstanding of the architect's function is found in every division of the building industry, as well as among owners and the general public."

ARCHITECTS DISCUSS PROBLEMS

An informal meeting of Spokane and Eastern Washington architects was held the latter part of October for the discussion of current problems relating to their profession. J. Stanley Smith, head of the department of architectural engineering at the State College, Pullman, had charge of the program.

WITH the ARCHITECTS

ACADEMY OF SCIENCES

A two-story and basement addition to the Academy of Sciences, Golden Gate Park, San Francisco, will be built from plans by Louis P. Hobart. There is available about $250,000 for the improvements. Mr. Hobart's office is also at work on plans for a large Tudor residence in Seattle, Washington, for D. E. Frederick of the Frederick & Nelson department store.

OAKLAND FACTORY

Working drawings are being completed in the office of C. W. McCall, architect of Oakland, for a factory at 41st Street and 81st Avenue, Oakland, for the Bluebird Potato Chips, Inc. The same office has completed drawings for a $400,000 Junior High School at 45th Avenue and Foothill Boulevard, Oakland.

APARTMENT BUILDING

Plans have been completed by Albert J. Schroepfer, Monadnock Building, San Francisco, for a three-story, frame and stucco apartment house at Pierce and Union Streets, for William J. Rasseto. There will be five apartments and a ten room residence.

SACRAMENTO BUILDING

Extensive alterations are planned to the one-story brick building at 9th and J Streets, Sacramento, owned by the Peoples Finance and Thrift Company. Charles F. Dean is the architect for the improvements which will cost $80,000.

ALAMEDA THEATER

Miller and Pflueger of San Francisco have completed drawings for a Class A steel frame and concrete theater for the Alameda Amusement Company. The building complete will cost $500,000, the auditorium having a seating capacity of 2000.

MONASTERY BUILDINGS

A group of monastery buildings are to be built at Carmel at an outlay of $500,000 for the Carmelite Monastery Sisters of Santa Clara. McGinnis and Walsh of Boston are the architects.

SAN FRANCISCO ENGINEER BUSY

The office of W. Adrian, structural engineer, 417 Market Street, San Francisco, is busy on a number of important commissions, including the new Junior High school, Santa Barbara, W. H. Weeks, architect; garage buildings for James A. Arnott, architect; seven-story concrete and frame apartment building, Sacramento and Gough Streets, San Francisco, L. O. Ebbetts, designer; and a Class A church at 14th Avenue and Irving Street, San Francisco, for St. Anne's Parish, Shea & Shea, architects.

LOS ANGELES STORE BUILDING

Plans have been completed by A. Godfrey Bailey 410 Hillcrest Building, Los Angeles, for a Class A store and loft building to be erected on Wilshire Boulevard, that city. The Kellogg Holding Company is named as owner. The French Norman style is to be followed. Mr. Bailey has also prepared plans for a $50,000 office building in Hollywood and he has completed drawings for a store and studio building on Wilshire Boulevard, Los Angeles, for Loren C. and Jessie W. Barton.

ALTERATIONS TO OAKLAND THEATER

Extensive alterations have been started to the Chimes Theater, College Avenue, Oakland, from plans by A. A. Cantin. When the theater is reopened its exterior and interior will have been repainted and decorated, new seats installed and the gallery enlarged. Improvements will cost $35,000.

CERTIFICATES TO PRACTICE

At the regular meeting of the State Board of Architectural Examiners, Northern District, November 25th, Provisional Certificates were granted to the following: Dole F. Thomson, 179 Lincoln Ave., Palo Alto; Otto G. Hintermann, 74 New Montgomery Street, San Francisco.

BANK OF AMERICA BUILDINGS

The Bank of America is having plans prepared by H. A. Minton, architect of San Francisco, for new bank buildings and remodeled banking quarters at Chico, Los Gatos, San Mateo, Modesto and Stockton. From $25,000 to $100,000 will be expended on each project.

OAKLAND FACTORY

Plans have been completed by O'Brien and Peugh of San Francisco, for a factory building at 18th and Peralta Streets, Oakland, for the Samarkand Ice Cream Company. The building will cost $25,000. The same architects have completed drawings for a one-story brick commercial building at 468 Turk Street, San Francisco, for Bell Brothers, Mills Building, San Francisco.

BANK IMPROVEMENTS

Some extensive improvements are to be made to the safe deposit department of the Wells Fargo Bank, San Francisco. Plans have been prepared in the office of T. Ronneberg, Crocker Building. One of the largest vaults in San Francisco will be built. The contractors are MacDonald & Kahn.

WATSONVILLE BUILDING

Albert F. Roller, Crocker Building, San Francisco, has completed plans for a one story Class C reinforced concrete office building in Watsonville, for the Coast Counties Gas & Electric Company. H. J. Brunnier is the engineer. The estimated cost is $65,000.

ALTERATION WORK

Walter C. Falch, Hearst Building, San Francisco, has let a contract for extensive alterations to a three-story frame flat building at 1351 Jackson Street, San Francisco. The flats are being remodeled into modern apartments. The owner is John Davis.

SAN JOSE LODGE BUILDING

Charles S. McKenzie, architect of San Jose, has completed plans and contracts have been awarded for the construction of a two-story reinforced concrete store and lodge building at 7th and Julian Streets, San Jose. The cost is $10,000.

LOG CABIN RESTAURANTS

Plans have been prepared in the office of Hardman and Russ, First National Bank Building, Berkeley, for a string of log cabin restaurants in Oakland, Berkeley and other East Bay cities. Kem Bemis is the promoter.

BRICK VENEER RESIDENCE

J. K. Ballantine, Jr., architect of San Francisco, has completed plans for a $40,000 brick veneer residence in Hillsborough for Charles Cherry, 111 Sutter Street, San Francisco.

ARCHITECTS WIN PRIZES

In the late *Household Beautiful* competition for the most beautiful homes recently completed, California architects secured one first prize, three second prizes and five honorable mentions.

In the five to seven-room class first prize was awarded W. W. Wurster, San Francisco; second prize to Soule, Murphy & Hastings, Santa Barbara; third prize to Goodwin, Thompson & Patterson, New York City, and honorable mention to H. Roy Kelley, Roland Coate and to the firm of David J. Witmer and Loyall F. Watson, all of Los Angeles.

Awards in the eight to twelve-room home class were given as follows: First prize, Ralph C. Flewelling, Los Angeles and Beverly Hills; second prize, Roland Coate, Los Angeles; third prize, Dunn & Copper, Cleveland; honorable mention, Hammond W. Whitsett, San Diego, and H. Roy Kelley, Los Angeles.

In the remodeled house class first prize was won by Hudson & Hudson, Buffalo; second prize, Benjamin S. Parker, San Marino, and honorable mention by Waldron Faulkner, New York City; Arthur McFarland, Bar Harbor, Me.; and Warren W. Ferris, Alexandria, Va.

Judges in the competition were Gordon Allen, A.I.A. of Boston; Francis Keally, A.I.A. of New York, and Ethel B. Power. Judging of awards was based upon excellence of design, skill in use of materials, economy of space and convenience of plan, and adaptation of lot to orientation.

The residence which won first prize for Ralph C. Flewelling was that recently completed for Mr. and Mrs. N. Y. Stockwell at 100 North McCadden Place.

The second prize award received by Benjamin S. Parker of San Marino is the home of Charles P. Plumb, artist of the comic strip, "Ella Cinders", and located at 132 Live Oak St., San Gabriel. The original house was approximately 20 years old and extensive changes were made both to interior and exterior.

Soule, Murphy & Hastings of Santa Barbara took second prize with the home of Major and Mrs. Carleton C. Griffith, situated in the Hope Park ranch.

Roland E. Coate's second prize entry is the William Hart home, adapted from the early California days.

SACRAMENTO AIRPORT

Sacramento is to have a new airport, plans for which have been completed by Harry J. Devine, architect of that city. There will be an administration building, hangar, etc. Special attention will be given to the lighting facilities.

PERSONALS

Walter E. Kelley has moved to larger quarters in the Guardian Building, Portland. The new suite is numbered 1005 and consists of four rooms, a reception room, private office, drafting room and library, all artistically finished and lighted.

Harry L. Copeland, pioneer architect of Longview, Washington, sustained a broken arm, a broken pelvis and serious internal injuries when he fell recently from the roof of his home.

Fred J. Rogers, recently returned from a month's motor trip through Oregon and California. Mr. Rogers, formerly located at 1427 E. Pike Street, is occupying his new offices in the Lloyd Building, Seattle, Washington.

Carleton M. Winslow has been appointed a member of the Los Angeles Municipal Art Commission to succeed Donald B. Parkinson, resigned.

A. W. EAGER

A. W. Eager, architect, died at his home at Palisades Del Ray, November 18, after a long illness, aged 66 years. Mr. Eager came to Los Angeles in 1887 from Hamilton, Ontario. He later practiced architecture in partnership with Sumner P. Hunt under the firm name, Hunt & Eager. This firm designed the Raymond Hotel at Pasadena and many other buildings, including several fine residences in the West Adams district. Later Silas P. Burns joined the partnership and the firm became Hunt, Eager & Burns. In 1910 Mr. Eager retired from the firm and formed a partnership with his brother, Frank O. Eager, practicing for a numer of years under the firm name of Eager & Eager. When this firm was dissolved A. W. Eager continued his architectural practice. He was a member of Southern California Chapter, A. I. A.

CLOSES ARCHITECTURAL OFFICES

P. J. Herold, architect and engineer, formerly of the R. A. Herold Company of Sacramento and more recently of San Francisco, writes that the Herold office in Sacramento has been permanently closed and the building trade is requested to discontinue forwarding trade literature to that city. Mr. Herold is at the present time temporarily located at 575 O'Farrell Street, San Francisco. He has retired from active practice for the time being as it is his intention to continue his travels abroad for study and research.

ANENT "ROOF GARDEN HOMES"

Here's a vision of your California home of the future:

Roof gardens on every bungalow.

Steel girder construction, assembled like a skyscraper.

Parlors and broad porches facing beautiful back yards, instead of fronting on noisy, traffic congested streets.

This new trend in home building, now being developed by national realtors and residence contractors, is already in an experimental stage in California, according to a statement by T. A. Kelly, deputy state real estate commissioner.

"In fact," Kelly says, "the residence of the future will do an about face. Verandas, porches and parlors will be reversed from the street front to the rear yard to escape the noise, odor and grime of congested streets."

This futuristic plan also provides a roof garden for every home.

"High slanting gables originated in northern Europe to shed snow, so we don't need them in California," Kelly declared. "Our homes of the future will be flat roofed, with each roof boasting its own garden."

Another change already revolutionizing the home building industry, reported to California realty head quarters, is a new scheme of constructing fireproof residences by steel girders, similar to the assembling of a modern skyscraper. Saving in labor is said to offset any added costs, at the same time reducing insurance expense.

The first of these new fangled steel homes is now under construction in Oakland.

To the above "news" item in the Call-Bulletin, a prominent San Francisco architect was asked to give his reaction and here it is:

"The published quotations from Mr. Kelly's statements are about as new and valuable in their import as a cargo of immature "Scotch". I feel reasonably certain that this Mr. Kelley, deputy state real estate commissioner, who tells the world how to construct in steel, why to build roof gardens on every bungalow, and the folly of building slanting roofs in California, must be a descendant of the mighty baseball batter Kelly, (or was it Casey?), who likewise faced three situations and struck out, as set forth in DeWolf Hopper's famous poetical recitation.

"Roof gardens on homes are as ancient as—well, before the Old Testament was written in Hebraic. There are roof gardens on innumerable homes in many lands today. It is a trite subject with the profession; its provision has many drawbacks which are well known and therefore need not be related here.

"Suggesting the use of steel girders for roof gardens, or any other structural purpose, is outside the realm of a new idea. It recalls the great Edison's pro-

posal to revolutionize small house construction; and how the newspapers illuminated his advent into architecture at the time. What happened to Edison's proposal is the more likely to happen to much lesser leading lights, who brazen subject matter which expressly trained minds have pre-digested and discarded. There is such redundant display of architectural wisdom by the sub-novitate, the profession does not find or care to take time to scratch these architectural fleebites which heal soonest when left alone.

"Mr. Kelly ascribes 'high slanting gables' (presumably signifying steep roofs) to 'northern Europe, to shed snow'. In this statement Mr. Kelly also assumes too much and knows too little about the many substantial reasons for building sloping roofs; also, too little about the world at large, and the many localities where they have scarcely anything but 'high slanting gables' and no snow at all. But this particular fallacy cannot be accredited to Mr. Kelly's ingeniousness in line with—'roof gardens and steel girders'. Nosiree! It has been said many times before."

LIMIT TO ENGINEER'S LICENSE

The California State Board of Architectural Examiners recently received a letter from a Los Angeles architect saying he had heard rumors that structural design was to be eliminated from the written examinations given by the board of applicants for architect's licenses; also that several engineers with whom he had talked, having been granted state licenses as civil engineers, were of the opinion that they were structural engineers and as such had opened offices with the expectation of designing buildings. They were of the opinion, the letter stated, that being licensed engineers they were privileged to practice architecture under the title of "structural engineer."

Such ideas are not only erroneous, according to A. M. Edelman, Secretary of the State Board of Architectural Examiners, but it is the intention of the Board to take action against any engineer attempting to practice architecture without an architect's license. Mr. Edelman made the following emphatic statement regarding the matter:

"Relative to the elimination from the written examination for applicants of 'structural design and strength of materials', please be advised that the third day of the written examination is devoted to these subjects, and there never was any desire or consideration on the part of the State Board of Architectural Examiners to eliminate them from their examination. On the contrary, strict observation is taken to the markings of the applicant's qualification on these subjects.

"Regarding the eligibility of civil engineers to practice architecture, please be advised that where a person has been licensed as a civil engineer, he is not entitled to practice architecture under the provisions of the State Act Regulating the Practice of Architecture, or of the State Act Regulating the Practice of Civil Engineering, and any one doing so, is subject to the penalties prescribed under the Architect's Act if found guilty.

"It is the intention of the State Board of Architectural Examiners to bring action against all persons who are practicing without a license, or who are putting out any sign, card or other device which might indicate to the public that they are qualified to practice architecture under a civil engineer's license."

DEPARTMENT OF ARCHITECTURE

Early reports point to the immediate success of the new Department of Architecture at the Nebraska State University, Lincoln. Professor Harry F. Cunningham, a designer on the Nebraska State Capitol, is chairman of this new department.

Before coming to the University of Nebraska, Mr. Cunningham was connected with the Goodhue Corporation, and spent several years as a practicing architect in New York, Washington, D. C., and Paris. He was attracted first to Nebraska by the State Capitol, for which he drew plans for the tower. Mr. Goodhue left only a preliminary sketch of this feature, and Mr. Cunningham carried on the work from this point.

"I am glad to be near the Nebraska capitol, because I truly believe it to be the greatest thing I will ever have any connection with," was Mr. Cunningham's answer when asked why he moved to the middle West. "The Nebraska State Capitol is one of the most beautiful buildings of all times. Its proportions are perfect," he declared. "The one thing needed now to properly frame the structure is more room, a block more on each side for landscaping," he added.

The new professor of architecture proposes to deal with his students as individuals, not as a class. The practice of teaching all students in the same way, he claims, is a sure way to turn out standardized packages.—*Minneapolis Improvement Bulletin.*

STOCKTON LODGE BUILDING

Charter Oak Lodge, Knights of Pythias, will have a new one-story brick club house at Madison and Commerce Streets, Stockton, from plans by Victor Galbraith, Elks Building, Stockton.

NORTHERN CALIFORNIA CHAPTER

A meeting of the Northern California Chapter, American Institute of Architects, was held at the Clift Hotel, San Francisco, on Tuesday evening, November 5, 1930. President Henry H. Gutterson presided.

Messrs. John Henry Nash, printer; Ralph Stackpole, sculptor, and Diego Rivera, visiting artist from Mexico, were introduced as guests.

The effort of the architectural press to encourage manufacturers to embody in their advertising some such phrase as "Consult an Architect" was brought to the attention of the meeting and unanimous approval of this program was voiced.

Mr. Ashley, who was appointed chairman of the committee to undertake a study of the methods of appointment of architects for municipal buildings, reported that after an exhaustive study, it was found that the Commonwealth Club was working toward the same end, and the two committees had collaborated to render a proposal for an art commission to be included in the new San Francisco Charter.

The provisions of this plan were explained by Mr. Ashley, who concluded by introducing a resolution, seconded by Mr. Allen, that the proposed Art Commission with its functions, be endorsed by the Northern California Chapter, A. I. A. Resolution was unanimously carried.

A letter from the Washington Chapter was read, requesting this Chapter to take action in keeping with theirs, in an effort to reduce the functions of the Supervising Architect of the Treasury to what the name implies, by having Federal buildings allotted to architects in the locality in which these buildings are to be built.

It was moved and unanimously voted that the secretary draft a resolution in keeping with the Washington Chapter's letter, and it was directed that a copy be sent to each Chapter, to the National Chamber of Commerce, to Congressional Representatives from California, to the Secretary of the Treasury and to the American Institute of Architects, such action being in effect a re-affirming of Chapters' previously adopted policy.

At the conclusion of the business meeting, adjournment was made to the print rooms of John Henry Nash on Sansome Street. Here the members spent several delightful hours in his library, where many volumes of rare old masterpieces of printing were inspected and admired. In his vivid and fascinating way, Mr. Nash recounted the historical background of the various books, together with interesting incidents in connection with his own work, with a full discussion on papers, bindings, type, composition, etc.

F. EUGENE BARTON BUSY

One of the busiest architectural offices in San Francisco is that of F. Eugene Barton, Crocker Building. As architect for the Bekin Van & Storage Company, Mr. Barton has recently been commissioned to prepare plans for a number of new structures and additions to existing buildings for the company. The largest is a seven-story Class A warehouse at Glendale, estimated to cost $125,000. Other work in Mr. Barton's office includes a two-story reinforced concrete bank building in San Jose for the Italian Building and Loan Association. This building will cost $60,000. Plans will be prepared for other buildings for the same owners in various California cities.

BOOK REVIEWS

By Edgar N Kierulff

THE NEW WORLD ARCHITECTURE, By Sheldon Cheney. Publishers, Longmans-Green & Co., 55 Fifth Ave., New York City. Price $10.00.

A remarkable book, being a survey, world-wide, of modern architecture. The author has interpreted the new architecture and the result is, as the review on the dust wrapper states, a startling volume.

There are three hundred illustrations, thirty of which present examples of the work of Frank Lloyd Wright, whose modern motifs have influenced European architects. The functionalist architects are represented and some examples of little known but valuable designs by Americans, such as Maybeck, Neutra and Goff are given.

Architects in the United States and Europe will find this book of inestimable value and interest, for it is more than a book on architecture—it is a carefully and wisely written treatise conveying modernism in architectural design.

HIGH SCHOOL GROUP

H. A. Minton, 525 Market Street, San Francisco, has been commissioned to prepare plans for a group of high school buildings in Piedmont Highlands, Alameda County, for the Holy Names Parish. There will be an academic structure, auditorium, gymnasium and dormitory.

SOCIETY and CLUB MEETINGS

SOUTHERN CALIFORNIA CHAPTER

Officers for 1931 were nominated at the regular monthly meeting of Southern California Chapter, American Institute of Architects, held at the University Club, Los Angeles, Tuesday evening, November 11. Nominations were made as follows: H. C. Chambers, president; Carleton M. Winslow, vice-president; H. Roy Kelley, secretary; Palmer Sabin, treasurer; J. E. Allison, director for the three-year term.

Gordon B. Kaufmann led a discussion on architects' services and charges. Robert H. Orr, chairman of the Los Angeles Building and Safety Commission, and A. M. Edelman, secretary of the California State Board of Architectural Examiners, informed the meeting of the work their organization is doing to improve architectural practice

A letter to the Chapter from the Los Angeles Municipal Art Commission was read, asking for the cooperation of architects in harmonizing the architecture of buildings facing the Los Angeles Civic Center.

H. C. Chambers, president of the chapter, presided at the meeting.

The following members were present: A. S. Nibecker, Jr., L. H. Lippiatt, R. D. MacPherson, J. J. Miller, J. E. Allison, A. F. Rosenheim, Myron Hunt, H. J. Reed Barrett, H. C. Chambers, Pierpont Davis, A. M. Edelman, Ralph C. Flewelling, Fitch H. Haskell, Gordon B. Kaufmann, Robert H. Orr, Donald D. McMurray, Roy Selden Price, William Richards, Robert B. Stacy-Judd, Donald R. Wilkinson, Henry F. Withey, David J. Witmer, L. A. Parker, J. T. Zeller, Horatio W. Bishop, Breo Freeman, Scott Gerity, Joseph Kaiser, Kemper Nomland and Vincent Palmer.

COMMONWEALTH CLUB—SECTION "A"

The October 30th meeting of the Section on Architecture of the Commonwealth Club of California, was devoted to a discussion of the artistic design of the new canopy of the Civic Auditorium, San Francisco.

The chairman outlined the subject, stating criticism that had been made of the canopy. He made clear that the meeting was held to consider methods of avoiding work open to such criticism in the future.

Supervisor Hayden, as guest of the Section, outlined the method of procedure in the undertaking as follows: The auditorium committee requested the Board of Works to provide a new canopy for the Auditorium. The Board of Works called upon the City Architect's office to prepare plans, on which bids for construction were taken. The City Architect's office recommended murals with local themes as a scheme of decoration. The contract was let to a tent and awning contractor. This contractor selected the painters to paint the decorations. The whole work was rushed to be ready in time for a convention of lighting engineers. Supervisor Hayden called attention to various improvements in the Auditorium as a result of the canopy and other work executed at the same time. He stated that his interest in the Auditorium was primarily from a business point of view, and that business has materially increased in recent months.

The chairman made brief comment to the effect that increase in business might be attributed to other causes, such as increased comfort and stage facilities, but not to the canopy as a work of art.

Supervisor Hayden stated that the situation would not have arisen had the city possessed an art commission, and suggested that now is the time to propose one to the Board of Freeholders for insertion in the new charter.

Mr. Altmann suggested that a board of art control or art commission be composed of volunteer members.

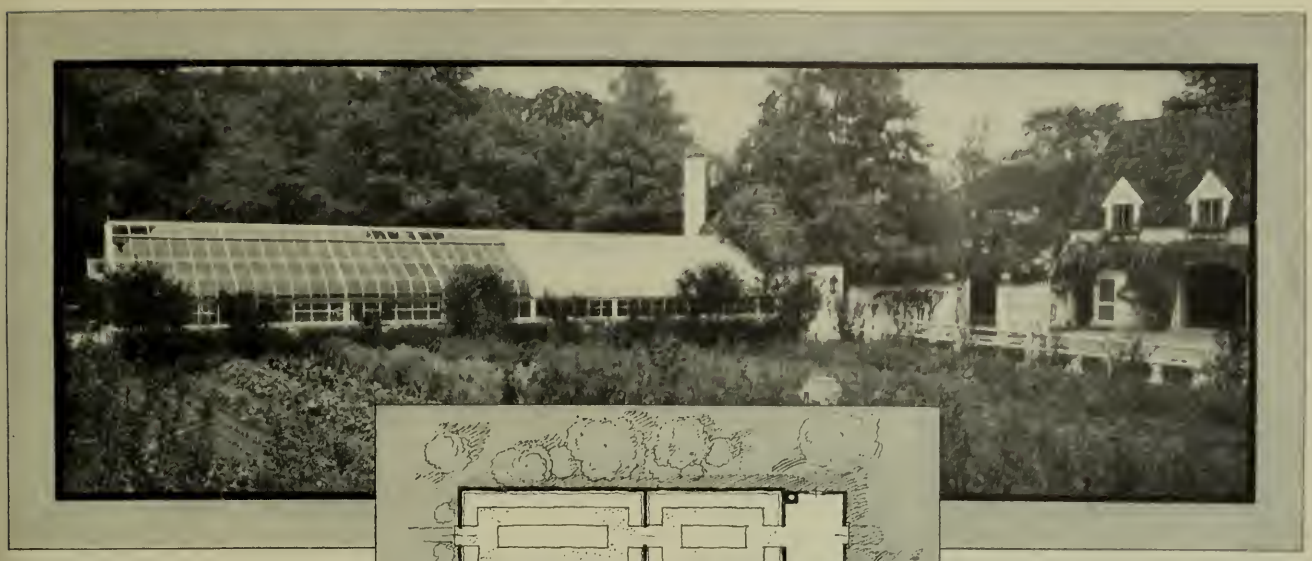
Mr. Ashley stated that the American Institute of Architects, Northern California Chapter, is studying the matter of an art commission.

The chairman stated that work has already been done along these lines by the Art Section of the Commonwealth Club.

Mr. Henley suggested that a combined meeting of the Art, Literature, Music and Architecture Sections be held to discuss the subject.

Mr. Mason suggested that such a commission contain artists in all lines and have jurisdiction over all the arts.

It was moved, seconded and unanimously carried that the next meeting be a joint one of the Sections on Architecture, Art, Drama, Literature and Music, for the purpose of starting work on a charter provision for an art commission to be presented to the Board of Freeholders; and that members of the Board of Freeholders and Earl Cummings, of the Park Commission, be asked to be present.—E.E.W.



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MILCOR NEW METAL LATH

The factories of the Milcor Steel Company are transferring sheet metal into a new, small mesh ribbed lath that embodies the salient features of the customary metal lath.

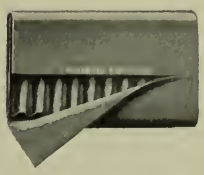
It is called Kuehn's Specialmesh and was designed for the purpose of securing adequate plaster key through a small mesh and at the same time providing sufficient metal surface not only for proper reinforcement, but for reduction in the amount of mortar used. There are 20,520 strands in one sheet of Kuehn's Specialmesh, which is 24 inches wide and 96 inches long. Tests show this size mesh to give the most positive plaster grip, a smaller or larger mesh reducing the efficiency of metal lath.

Today few large structures are built without metal lath and the trend in residential building is now toward skyscraper construction. Kuehn's Specialmesh is particularly designed for all types of building. It is furnished flat (painted) for interiors and is corrugated especially for stucco.

The Milcor Steel Company has prepared a handsome four-color folder showing interiors and exteriors plastered on Kuehn's Specialmesh, and giving interesting data on this lath. It will be sent to anyone writing this magazine or the company.

COWING
Pressure Relieving
JOINT

Patented September 1, 1925



Insures Facades Against Cracked or Broken Facing Blocks

RAND TOWER, MINNEAPOLIS
Holabird & Root, Architects

THE Cowing Joint is installed in the columns and weight carrying mullions at a mortar course. Its purpose is to relieve pressure thrown on the facing material by compression of steel, temperature changes, vibration and wind stresses. Experience has proved that these severe stresses, unless relieved, will crush and break the stone, terra cotta or marble.

Where the Cowing Joint is installed at each story height the building is completely insured against cracks and spalls, the mortar joints are protected from crushing and the maintenance cost of tuck-pointing is eliminated. The facade is in no manner weakened because the Cowing Joint carries the normal weight of the facing material and compresses only enough to relieve the stress.

See "SWEETS" Catalogue

Cowing Pressure Relieving Joint Co.
226 WEST SUPERIOR STREET CHICAGO, ILLINOIS

Over a Half Million Variegated Buff Richmond Face Brick

WILL BE USED

on the New Ford Assembly Plant at Richmond, California

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COFFEY & RIST, *Architects*
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REED & REED, *Masonry Contractors*

HIGH SCHOOL BUILDING, PACIFIC GROVE, CALIF.
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PACIFIC GAS & ELECTRC BUILDING, AUBURN, CALIF.

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The modern idea of color and beauty in the home has extended to the kitchen and service hall. Duplex Krause Porcelain Incinerator doors are permanently beautiful fixtures that add much to the attractiveness and value of the building. . . . . .

A sanitary and concealed system of storage that provides for fuelless and odorless burning. . . . . .

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APARTMENT HOUSE ARCHITECTURE

A criticism and a prophecy in "Architectural Design"

TO justly criticize American apartment houses one must consider the many sides of the problem. First there is the fact that, like the office building the apartment house is, strictly speaking, a commercial proposition. To bring in a reasonable return on the money invested is the end to be sought in any apartment house project. Therefore, the all-essential factor is an economical, convenient, well arranged plan. Architects most surely have accomplished this during the past 20 years of intensive apartment house construction. Today there is no excuse for any architect's designing a poorly planned apartment house. The plans of countless successful buildings of this very specialized type and purpose are available for his information and inspiration. Architects have reduced to a formula the problem of planning a successful apartment house. The most difficult problem is that of the cooperative apartment, to fit together in a given amount of space the varying plans of the different privately owned apartments. To plan successfully such de luxe cooperative apartments is an architectural problem of the first magnitude,—buildings in which one, two, and even three-story apartments have to be dove-tailed together.

Second, and of real importance because of its effect upon the public and the environment, is the exterior design of the apartment house. Subconsciously, architecture affects and moulds public artistic taste more than does any of the other arts.

* * *

Evolution in architectural design has made encouraging progress during the past five years. The fetters of traditional adherence are fast falling away. Architectural design is entering upon a period of the greatest potentialities. With imagination and inspiration untrammeled and unimpeded by traditional prejudice, may not the architect of today and tomorrow achieve a new and genuine style expressive of, and appropriate to, the great new architectural problems which this scientific and commercial age has imposed upon architecture, the greatest of the creative arts?

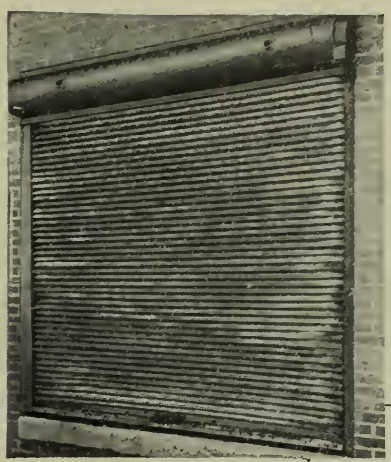
It is evident, after a study of the exteriors of American apartment buildings in their architectural aspect, that the architect has failed to develop an appropriate design for the multiple-dwelling building. Again, there are two reasons for this obvious failure, —lack of rational appraisal of the problem, and the effect of speculative builder ownership.

The transition from the one-family to the multiple-family dwelling has altered many of the old social and family customs. Notwithstanding these radical changes, there has persisted a belief that the exterior and interior characteristic of the one-family dwelling should be incorporated in the apartment building. The architect has failed to appreciate the fact that an en-

28 years ago installed in an Oklahoma Garage

18 years later sold by owners — *at more than its original cost—and installed* in a furniture warehouse

today "working first class" *(see letter below)*



The new Kinnear Rolling Door Catalog is mailed free on request. Kinnear Engineering and Estimating Service is available without charge or obligation.

GROSS CONSTRUCTION COMPANY

GALVESTON WACO OKLAHOMA

Oklahoma City, Okla.
Oct. 27, 1920

Eighteen years ago I bought a door from you for my garage. I have used the door ever since. Last week we finished a warehouse for a large furniture concern here. They wanted a rolling door quick. We took our garage door off and sold it to them for more money than the door cost me eighteen years ago. Of course the price was lower then. They are very much pleased with the door - it is working first class.

GROSS CONSTRUCTION CO.
By F. A. Gross

Note that this letter is dated Oct. 27, 1920. This same door - after 28 years - just as Mr. Gross said 10 years ago - "is still working first class."

kinnear ROLLING DOORS

UNUSUAL?

Unusual? . . . Yes—but it is this delivering dependable, satisfactory service, day-in and day-out for years and years and years that has established for KINNEAR Steel Rolling Doors the pre-eminent position they occupy in the rolling door field today. Why be satisfied with anything less than the best—especially when, service considered, KINNEAR Steel Rolling Doors actually cost less? Write for your copy of the illustrated Kinnear catalog and details of Kinnear Engineering and Estimating Service available without cost or obligation.

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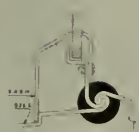
WINDOWS

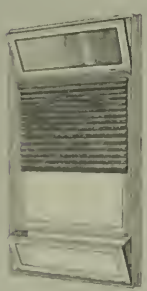
IN-SWINGING TYPE
SEALAIR WINDOW



Continuous
Water-proof hinge.
Patents applied for.

VENTILATION
In-swinging Sashes permit controlled ventilation, without unpleasant drafts.

CLEANING
May be washed entirely from the inside.



Application of
shaile Translucent
glass in transom.

INSULATION
When closed, insulation between sash and frame protects against weather.

SAFETY
Difficult for anyone to fall or leap out.

NOISELESS
Sealair Windows will not rattle — operate easily, silently ond independently.

Furnished in Bronze, Aluminum Alloy or Steel. All joints strongly welded.

Kawneer
SEALAIR
WINDOWS

THE KAWNEER COMPANY, NILES, MICHIGAN
KAWNEER MFG. CO., BERKELEY, CALIF. (SUBSIDIARY)
Manufacturers of
RUSTLESS METAL STORE FRONTS, WINDOWS AND DOORS

tirely new kind of design was required for an entirely new type of residence. What is the result? We find an attempt to apply the traditional features of the one-family dwelling or the palace to the multiple-dwelling, regardless of its number of stories, shape, bulk, location and the altered sociological condition of the family. The apartment building is essentially a residential structure, but it is of such a specialized character that it requires a specialized treatment of its architectural design. Acknowledging the force of the tenant's preferences for certain architectural effects, it should be as easy to exploit the tenant's *herd* instinct in favor of the good as for the mediocre.

It was and is well within the architect's province to evolve and establish certain distinctive and appropriate modes and limitations for the design of this type of building. The method actually employed was to attach to the elevations and lobbies, with incomprehensible naivete, fragments of one historical style or another, entirely disregarding the fact that these styles were developed exclusively for dwellings or palaces of from one to four or five stories in height. The result is a lack of unity and clarity of design, involving a disproportion of inappropriate parts,—it could not be otherwise. The application of the traditional styles to the office building resulted in architectural mistakes that are now definitely recognized, and corrective measures are being employed by architects who understand function and character. The same process of intelligent thought must be used for the development of appropriate apartment house design.

By and large, the American apartment house in its architectural design is decidedly disappointing, especially when we realize the great importance of this type of building and the tremendous financial investments that it represents. Perhaps there is an extenuating circumstance applicable to the architect. It has been the policy of the ownership to concentrate on the rentable plan which is successfully developed. The architectural design is considered as secondary. If a building possessed pronounced renting qualities, however mediocre its architectural design, it was reproduced by the same or other owners because of the same herd instinct that characterizes the tenant.

In the opinion of the owner, the architect's only function is to produce a plan, with an elevation that is rentable and also acceptable to the building departments. Too often the owner resorts to the use of "free engineering" services provided by the various subcontractors. The architect is paid an inadequate remuneration which does not permit him to give a sufficient amount of his own time or to employ competent designers. It is a case of procuring the most, not the best, for the least money.

There are notable examples of appropriately designed apartment buildings found in every section of the country. They are the products of an understand-

ing, cultured and appreciative ownership and of architects who have been adequately remunerated so as to enable them to render complete architectural service of the highest quality. A general improvement and eventual attainment of fine architectural designing of apartment buildings may result from the same causes that have produced the noticeable present-day improvement in office building design: greater competition for tenants; a more intelligent and cultured ownership; and, adequate remuneration for architects; more careful discrimination on the part of bankers in making loans.

The cooperative apartment building is a radical development in that the occupants are owners instead of tenants. An owner is more interested in the quality of the home than is a tenant and, perhaps, possesses more discrimination and knowledge. Owners of this type, at least, can afford to employ competent and adequately paid architectural service. The cooperative apartment building, because of its increasing excellence, may force an improvement in the architectural design of the tenant-occupied apartment building.

While there are many architects who deplore the "poor architecture" of the usual apartment house, it can hardly be denied that the buildings as we see them are an expression of American taste and American custom. We know this because it has been tested and is being tested every day by renting agents. The public is given what experience shows it wants enough to pay for. If the taste in the city is raised to a level at which it thinks it appreciates the charm of old English houses, this is soon reflected by fake "half-timber" and meaningless gables applied to the apartment exterior. A building in one so-called style which rents successfully will be copied by the next speculative builder in the vicinity. The taste expressed is not necessarily the taste which would be shown in answer to a questionnaire, and yet it is the taste which the American public is backing up with its dollars and cents.

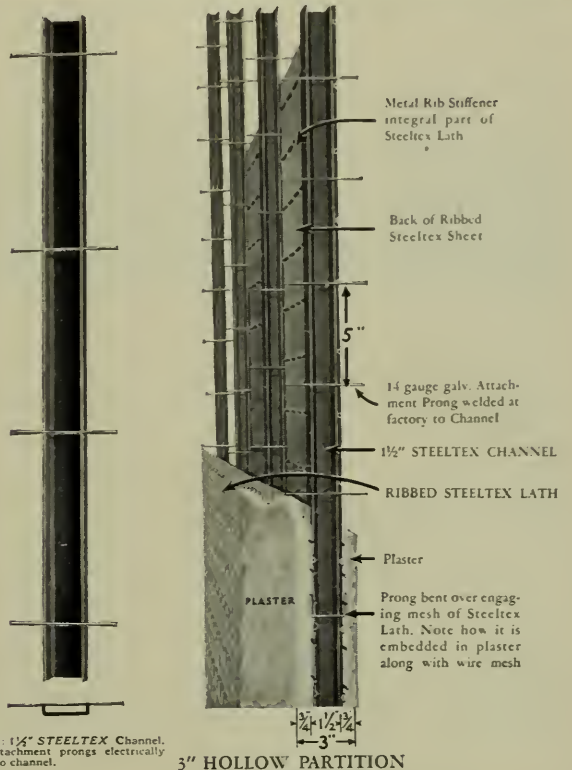
Until recently practically all the apartment houses were of a speculative nature. The cooperative apartment has to some extent changed this, and many architects of outstanding ability have designed buildings in this field.

* * *

The architect is usually receiving too small a fee to justify a thorough study of the problem, so the plan is given the benefit of some cumulative renting experience (if not scientific analysis), and the exterior is ornamented rather than made an integral part of the design. Until architects can demonstrate the money value of plan analysis and studied design throughout, we can hardly hope for better apartment architecture.

STEELTEX
3" HOLLOW PARTITION

USING 1½" STEELTEX CHANNELS AND RIBBED STEELTEX LATH.


Metal Rib Stiffener integral part of Steeltex Lath
Back of Ribbed Steeltex Sheet
5"
14 gauge galv. Attachment Prong welded at factory to Channel
1½" STEELTEX CHANNEL
RIBBED STEELTEX LATH
Plaster
PLASTER
Prong bent over engaging mesh of Steeltex Lath. Note how it is embedded in plaster along with wire mesh
¾" 1½" 1¾"
3"

Above: 1½" STEELTEX Channel. Note attachment prongs electrically welded to channel.

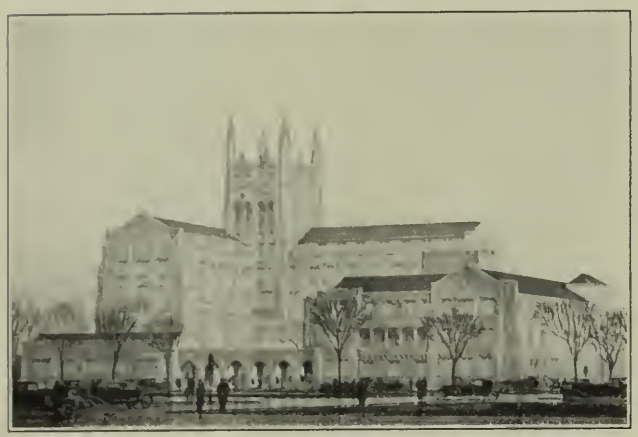
3" HOLLOW PARTITION using 1½" STEELTEX CHANNELS and RIBBED STEELTEX LATH

This modern *STEELTEX* 3" HOLLOW PARTITION is built up by means of *STEELTEX* 1½" channels having galvanized wire PRONGS electrically welded to the channels at 5" intervals. These prongs puncture the fibrous backing of Ribbed *STEELTEX* Lath . . . the prongs are bent over the reinforcing mesh of Ribbed *STEELTEX* Lath and pressed in firmly. As the plaster is applied over Ribbed *STEELTEX* Lath both the PRONGS of the *STEELTEX* ½" channel and the galvanized, reinforcing MESH of Ribbed *STEELTEX* Lath are *automatically* embedded in the plaster (see illustration above).

Above: A sheet of Ribbed *STEELTEX* Lath (plaster side showing reinforcing mesh). Rib stiffeners run across the back of Ribbed *STEELTEX* Lath and give every sheet board-like rigidity during plastering. Send for our new book, "*Modern Building Methods*" . . . IT'S FREE . . . write today for your copy,—address DEPT. K-53.

NATIONAL STEEL FABRIC COMPANY
Union Trust Building Pittsburgh Steel Co. *Pittsburgh, Pa., U.S.A.*

HAZARD HELPS THE COMING GENERATIONS



The Chicago Lying-in Hospital and Dispensary. Architects: Schmidt, Garden and Erikson. General Contractor: H. B. Barnard. Electrical Contractor: Lab Electric Company.

Is there any hospital more important than a maternity institution where coming generations are helped into a waiting world? Is there any place where dependable light is more important than in the delivery room of a lying-in hospital? Can you name a use for electric wire and cable where more depends upon its utter reliability? In the magnificent new Chicago Lying-in Hospital and Dispensary, Hazard Standard 30% building wire is being installed throughout. By selecting a recognized brand with an established record of reliable performance to recommend it, by choosing the highest quality (30%) of that proven Hazard brand, the builders have insured that nothing will be left undone to give light to the coming generations as they arrive out of the "everywhere" and face the "here."

Hazard Insulated Wire Works

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DRENDELL-TRUMBULL MERGER

The Drendell Electrical & Manufacturing Company, pioneer manufacturers of switchboards and panel boards on the Pacific Coast, with factory at 1760 Howard Street, San Francisco, announces the consolidation of their company with the Trumbull Electric Manufacturing Company of Planeville, Connecticut. The merged companies will hereafter be known as the Drendell-Trumbull Electric Manufacturing Company and the main offices and factory will be located in San Francisco. The new company will confine its activities to the designing and manufacturing of switchboards, panel boards and electrical specialties. L. Siebert, formerly Vice-President and Secretary of the Drendell Company, becomes President and Manager of the new company. Mr. Siebert is well known to the architectural and engineering professions on the Pacific Coast, he having been one of the organizers, with J. Gensler, of the Drendell Company. Many of the largest public and commercial buildings in California are equipped with the Drendell products, known to the trade as "Demco."

RADIO SYSTEM FOR APARTMENTS

In the modern scheme of things, radio occupies a position of equal importance with the telephone and the electric light. In the Clay-Jones and 1150 Union Street Apartments, San Francisco, Architect Albert H. Larsen has had the foresight to include an RCA Victor Centralized Radio System in his plans.

The tenant in each apartment tunes in his own choice of radio program with better results than he could normally obtain and without any fuss or bother or unsightly makeshift wiring.

This is made possible by a radio transmission line system, especially designed for each building by engineers of the RCA Victor Company, Inc. Only one radio antenna, neatly constructed and inconspicuous, properly coupled to the centralized system, is required for the entire building.

SERIES OF LECTURES

Robert Stacy-Judd, A. I. A., well known authority on Maya architecture, is giving a series of lectures on the subject in Barker Brothers' auditorium, Los Angeles. The first lecture, "Exploring Mysterious Yucatan," was given before a large audience on Friday afternoon, December Fifth. Other lectures will be given from time to time during the winter.

NEW MONEL METAL SINK

The International Nickel Company, Inc. has announced it will shortly place upon the market, a new Monel Metal sink that will be a distinct innovation. The exclusive distributors on the Pacific Coast of Monel and Nickel are the Pacific Foundry Company, Ltd., with factory and executive offices in San Francisco.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—

Common, $29 to $35 per 1000 laid, (according to class of work).
Face, $70 to $95 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $.95 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.85 sq. ft.
Common, f.o.b. cars, $12.00 plus cartage.
Face, f.o.b. cars, $45.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 94.00 per M
4x12x12 in.	106.00 per M
6x12x12 in.	154.00 per M
8x12x12 in.	235.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$108.00
6x12x5½	74.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.
Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.
Terazzo Steps—$1.50 per lin. ft.
Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Eliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
Eliott top gravel, at bnkrs.	1.40 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) $2.64 per bbl.
Cement (f.o.b. Job, Oak.), $2.64 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Atlas "White" .....$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4½-inch concrete basement floor.....14c to 15c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps.....$1.26 per lin. ft.

Dampproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $5.50 per square.
Hot coating work, $2.00 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).
Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—

Sand, 50 cents; clay or shale, $1.00 per yard.
Teams, $10.00 per day.
Trucks, $21 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 80c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c per square foot.
Note—Add extra for setting.

Heating—

Average, $1.70 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, $23.00 per M (average).
Common O. P. select, average, $30.00 per M.

1 x 6 No. 3—Form lumber	$19.00 per M
1 x 4 No. 1 flooring	42.00 per M
1 x 4 No. 2 flooring	39.00 per M
1 x 4 No. 3 flooring	35.00 per M
1 x 6 No. 2 and better flooring	39.00 per M
1¼x4 and 6 No. 2 flooring	48.00 per M

Slash grain—

1 x 4 No. 2 flooring	$34.00 per M
1 x 4 No. 3 flooring	32.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	4.00 per m

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$135.00 M ft.
1 1-16x2¼" T & G Maple	145.50 M ft.
⅞x3½ sq. edge Maple	132.50 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq. Ed.
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	

Laying & Finishing 16c ft. 15c ft. 13c ft.
Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.40
3 ply per 1000 ft. roll	8.00
Sash cord com. No. 7	$ 1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.25 base.
Belgian nails, $3.00 base.

Millwork—

O. P. $80.00 per 1000. R. W., $80.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.00 and up, each.
Doors, including trim (single panel, 1¾ in. Ore. pine) $6.75 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 20c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $5.50 each.
Dining room cases, $6.50 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.
For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo.	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

Tennessee ..... 1.70 sq. ft.
Verde Antique ..... 3.00 sq. ft.

NOTE—Above quotations are for ⅞ inch wainscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique .....$2.50 sq. ft.
Tennessee ..... 1.50 sq. ft.
Alaska ..... 1.35 sq. ft.
Columbia ..... 1.45 sq. ft.
Yule Colorado ..... 1.45 sq. ft.
Travertine ..... 1.60 sq. ft.

Painting—

Two-coat work .....30c per yard
Three-coat work .....40c per yard
Whitewashing ..... 4c per yard
Cold Water Painting ..... 8c per yard
Turpentine, 78c per gal. in cans and 63c per gal. in drums.
Raw Linseed Oil—$ .90 gal. in bbls.
Boiled Linseed Oil—$ .93 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs)

Per. Lb.
1 ton lots, 100 lbs. net weight 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots 13c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots.....13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 13¾c
500 lb. and less than 1 ton lots....14c
Less than 500 lb. lots.....14¼c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch.....$1.00 lineal foot
8-inch..... 1.50 lineal foot
10-inch..... 1.85 lineal foot
12-inch..... 2.10 lineal foot

Pipe Casings — 12″ long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.40
2 coats, lime mortar hard finish, wood lath	.52
2 coats, hard wall plaster, wood lath	.55
3 coats, metal lath and plaster	1.00
Keene cement on metal lath	1.25
Ceilings with ¾ hot roll channels metal lath	.67
Ceilings with ¾ hot roll channels metal lath plastered	1.40
Shingle partition ¾ channel lath 1 side	.62
Single partition ¾ channel lath 2 sides 2 inches thick	2.20
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	2.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Atlas cement, brick or concrete wall	1.25
3 coats cement finish No. 18 gauge wire mesh	1.75
3 coats Atlas finish No. 18 gauge wire mesh	2.05

Wood lath, $4.50 per 1000.
2.5-lb. metal lath (dipped) 18
2.5-lb. metal lath (galvanized) 21
3.4-lb. metal lath (dipped) 23
3.4-lb. metal lath (galvanized) 27
¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, $13.85 (rebate 10c sack).
Dealer's commission, $1.00 off above quotations.
Hydrate Lime, $19.50 ton.
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—

From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $5.25 per square for 30 squares or over.
Less than 30 squares, $5.50 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—

Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, $1.25 sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Stone—

Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Steel Structural—$90 per ton (erected). This quotation is an average for comparatively small quantities
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $86.00 to $90.00 per ton.

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Bricklayers' hodcarriers	7.00
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Cabinet workers, (outside)	9.00
Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housesmiths, arch. iron, skilled all branches	9.00
Housesmiths, arch. iron, not skilled all branches	8.00
Housesmiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
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Mosaic and Terrazzo helpers	6.00
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Painters, varnishers and polishers (outside)	9.00
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Plasterers' hodcarriers	7.50
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Steam fitters	10.00
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Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
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Tile helpers	6.00
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Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
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General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scraper teamsters, 2 horses	6.00
Scraper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Friday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturdays, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

MODERNISTIC VS. TRADITIONAL ARCHITECTURE

By William Orr Ludlow, F.A.I.A.

IS MODERNISTIC architecture soon to displace the prevailing styles?

Do Colonial, Elizabethian, Italian Renaissance now belong to the past in this country, and a few years hence will they simply indicate buildings that are old-fashioned? Shall we soon refer to them with the complacent superiority with which we mention Victorian Gothic, French Mansard, Cupola and Band Saw architecture?

Now this is a very interesting question to most of us, and an exceedingly important question to those who are about to build, or who are anxious about the sale value of their homes or other buildings.

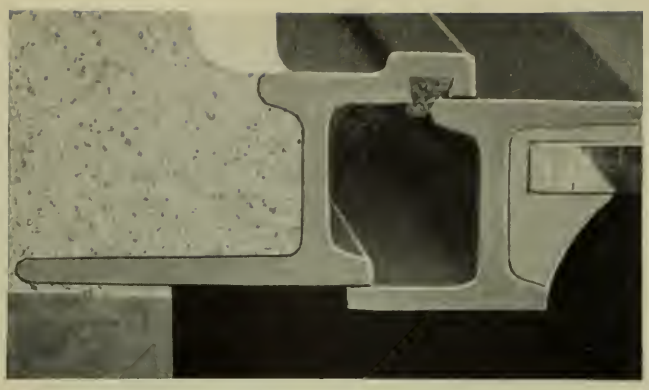
In attempting an answer, let us admit the fact that the present generation cares little for tradition. We are beginning to do things now more because they are reasonable than because "we always have done them that way." To be sure, it leaves us in a position of uncertainty about what we shall be doing tomorrow, but after all, adventure is the only way of progress.

We must admit, too, that in this "machine age," efficiency is making us more materialistic, and less responsive to such intangible things as sentiment, tradition, beauty. These new standards have even now affected nearly everything, business methods, habits, customs, ethics, religious views, music, art, all in greater or lesser degree, and that they will affect our architecture is quite certain. Indeed one has but to look at our recent skyscrapers to see that the architecture of our big buildings has not only been affected; it has been revolutionized. We have proven that it is not necessary to borrow the old clothes of previous generations to cover an entirely new creation—the steel frame building. We have designed office buildings that are truthful, logical and beautiful; that have no trace of Colonial, Elizabethan, or Italian.

Moreover, in our big buildings we are beginning to replace the small units like brick by materials in large units, such as sheets of non-corrodible chrome steel, large wall boards for plaster, light hollow plaster blocks for brick or tile, reinforced concrete in great slabs for terra cotta blocks. Already, therefore, the skyscraper of today bears no resemblance even in style to high buildings of only a few years ago, and the skyscrapers of a few years hence will bear no resemblance to the skyscrapers of today.

It is quite sure, then, that we are in the midst, perhaps only at the beginning, of an era of change, and what is happening to our large buildings is likely to happen to our smaller buildings. In fact we are quite sure to use in our smaller buildings many of the new materials borrowed from our large buildings.

Of course, in designing our houses, we have not the same problems to solve that the steel frame and great height impose, nor have the requirements of the house



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changed as greatly as those of the office building. But every day new materials and new forms of construction are being put on the market and new things are demanded, such as the incorporation of the garage with the house, the omission of the separate dining room, and larger windows for more sunshine.

It seems quite sure also that a few years from now the slow process of sending a lot of lumber to the site to be cut and fitted laboriously by a gang of carpenters to make the frame of a house will be replaced by the less expensive shop production of light steel members, cut and fitted in the shops, and sent to the site—a steel frame complete, and erected in a few days' time by a few especially skilled erectors. It seems quite sure that we shall use in our houses more large units like wall boards, to do away with the traditional three coats of plaster; that our floors will be in a single plastic slab instead of small boards; that our roof coverings will no longer be of little shingles put in by hand at considerable expense, but of sheet metal of durable and pleasant design, or of large thin composition, or of terra cotta slabs.

We may say, then, that there are these major factors that we must reckon with in any attempt to answer our question as to the passing of present architectural styles—the disregard of tradition, the efficiency of a machine age, the introduction of new materials and new methods of building and new housing requirements. That these will change both our architecture and our construction is beyond a doubt.

Having admitted all this, let us pause just a moment, however, to remember that there is, fortunately, an element that enters into the design of a home that the methods of the big building and a machine age will never destroy. The home is not primarily built to pay dividends, and the sentiment about "home" is not dead yet by any means. Witness the thousands of individual homes being erected all over the country, even in these hard times. The "family" means something, and as long as it does the design of our homes is not going to be levelled to the utilitarian box that some would have us believe. In making the home, efficiency and iconoclasm will never wipe out that kind of sentiment that opposed to materialism makes life worth while.

We are surely going to change the character of our homes, we shall probably abandon largely the "styles", but we are not about to rush headlong into a sterile modernism, nor shall we change our ideas over night, of what is beautiful and suitable for the expression of "home".

EXHIBIT OF TRAVEL SKETCHES

Raymond Yelland, A. I. A., is conducting an interesting exhibition of travel sketches made abroad, in the East-West Galley, 609 Sutter Street, San Francisco. The exhibition will continue during the entire month of December and those interested are cordially invited to attend.

NEW FLOOR COVERING

Royalite is the name of a new product of the United States Rubber Company which has been developed for use as a covering for floors and walls and as an interior trim.

One term used in describing Royalite is "architectural rubber". Up to the present time, the use of rubber in architecture has been limited largely to imitations of wood, marble or other stone. Royalite has a character of its own. It is not an imitation of any known material. It is rubber. The colors and textures are new and were developed in the United States Rubber Company Laboratories in collaboration with Ben Nash, renowned colorist.

When an architect plans a modern office building he has no advance information on how the various spaces on any floors are going to be divided to suit prospective tenants. As a result the architect is greatly handicapped in planning the interiors. He does not know how these interiors will be specified by the tenants and as a consequence about all he can do is design a loft building with adequate elevator equipment and it is not until the building is well along toward completion that many of the corridors and interior spaces are definitely decided upon. Therefore, the architect is looking for material which can be quickly adapted to change of plans. He is looking for a material that can be speedily delivered from the manufacturer and conveniently installed. In short, he is looking for flexibility. Royalite furnishes such flexibility and as a consequence it has a tremendous future in the architect's plans.

A fair measure of the value of any material is in the limitations which that material presents. Marble, for instance, is limited to the colors available in various countries and quarries of the world. Wood is also limited in color as well as in texture. Such materials are not only expensive, but must be ordered and planned for months in advance of installation. Royalite is without any limit as to color and it is a soft resilient material which withstands abrasion and is easily available, easy to install and of exceptionally long life.

AUTO SALES BUILDINGS

Plans have been completed for two auto sales buildings by James A. Arnott, 417 Market Street, San Francisco. One structure for Roy Hasselbach will be built on Fillmore Street, near Chestnut, San Francisco, and the other for the Berry Motor Company, will be at 17th Avenue and Irving Streets, San Francisco. The approximate cost of both buildings is $25,000 each.

RESIDENCE ALTERATIONS

Extensive alterations are to be made to the mortuary of Grant D. Miller, Telegraph Avenue and 29th Street, Oakland, Miller and Warnecke, architects.

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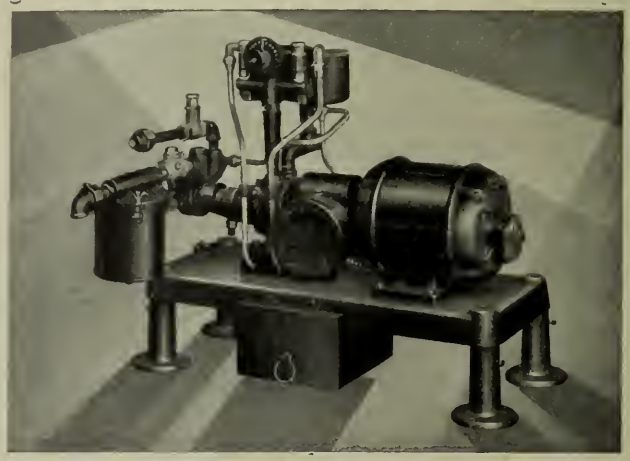

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Photo by McCullagh

FACADE, PUBLIC LIBRARY BUILDING, BERKELEY

JAMES W. PLACHEK, ARCHITECT

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THE BERKELEY PUBLIC LIBRARY

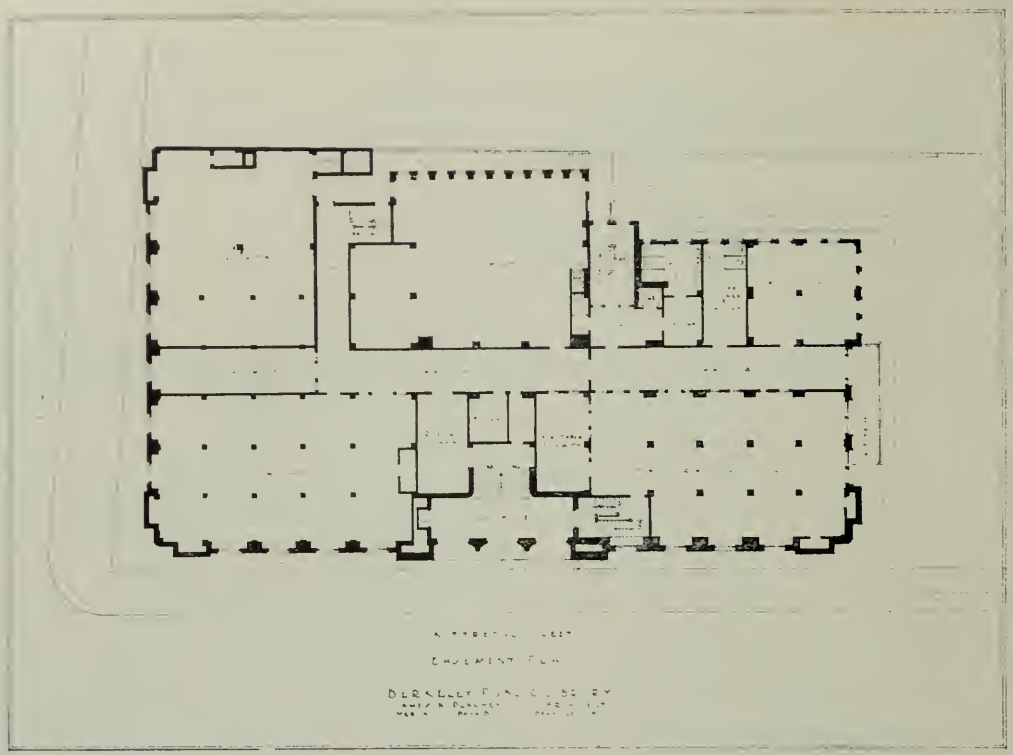
by WILLIAM I. GARREN

THE Berkeley Public Library problem differs in no pronounced respect from that of other public libraries of similar requirements and conditions throughout the country. The library does not relate to the University of California at Berkeley, but is purely for the use of the Berkeley people. It is located in the central shopping district where it is accessible to all.

In a library of this type the city and its people look for several services. The primary function of a library is to house books in such a manner that they may be brought into intimate use by the people, for reading in the library, for reference or for outside borrowing. The problem in the public library today comes in the balancing between the various space requirements and their relative value. Obviously the spirit of a library is best realized when people and books are brought together in close contact. A large and yet intimate reading space, commodious storage space for books and a small administrative cost, together with a limited plant cost, are, architecturally speaking, competing factors. If the library is made bookish and architecturally intimate, it may have limited capacity; if, on the other hand, it has large book capacity and simplified administration, it becomes quite practical and satisfies the people.

KITTRIDGE STREET FRONTAGE
LIBRARY BUILDING, BERKELEY

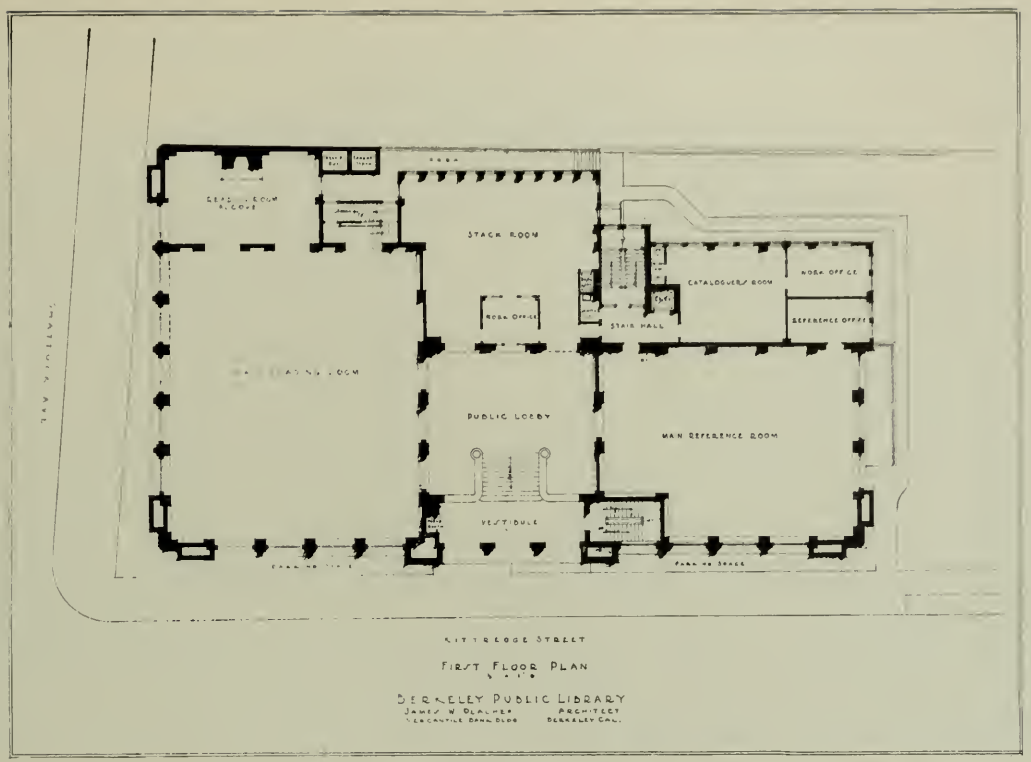
Unfortunately it is felt from a civic standpoint that when a library is being built, it must be a grand monument. That it should form a part of the city scheme of beauty there is no doubt, but in most cases where an attempt has been made to make it monumental the architect finds it difficult, except in a very costly structure, to successfully satisfy both the requirement of the books and the monumental demand. I feel that outside of a civic center or public group the library should be for people and their books and monumentality will come



ENTRANCE STAIRWAY, LIBRARY, BERKELEY
James W. Plachek, Architect

from the community spirit and beauty, rather than from bulk of structure. I recall my visit to a library while in Oxford, England. I wandered around the book-cases which were about eight feet high and up ladder stairways to the tier above. Within arms reach were comfortable chairs and tables. A low vaulted room with carved wood ceiling and tracery windows at the end created a romantic setting such as I have never since experienced. I felt an urge to remain and study and handle the volumes where perhaps once Spencer, Addison and Chaucer had studied with students from the schools. The librarian must have gone to Sir Christopher Wren the architect and said, "I should like a house for my books". I can hear Wren answer, "Go stack your treasures in your garden as you would like to use them. I will then come over and build you a shelter for the books."

The Berkeley library had a limited site program, a limited and reduced cost and an overtaxed library need. The site, I understand, had to be fully occupied to satisfy the requirements. The first floor contains a reading room, reference room, central con-

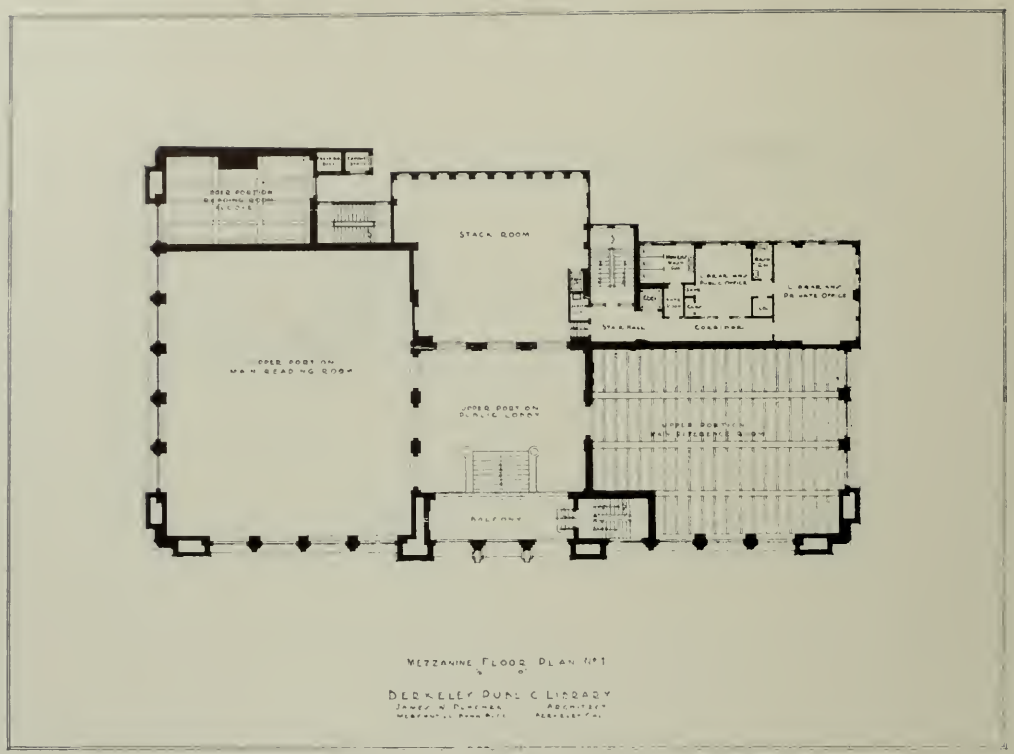


trol room and stack space, and completely fills the lot. The main street, Shattuck Avenue, unfortunately was the narrow end of the lot so that for practical reasons of plan and cost the entrance was placed on Kittredge Street. Added to the problem was an acute angle at the principal corner. I feel that breaking away from the building line of the street without a complete set-back is unfortunate and disturbing. However, Mr. Plachek explains that he was forced to decide whether it was worth the extra cost for building into this acute angle, together with the disturbing shape it would have created in the main reading room. This does not affect the design of the building and the architect has from this standpoint reached the best solution.

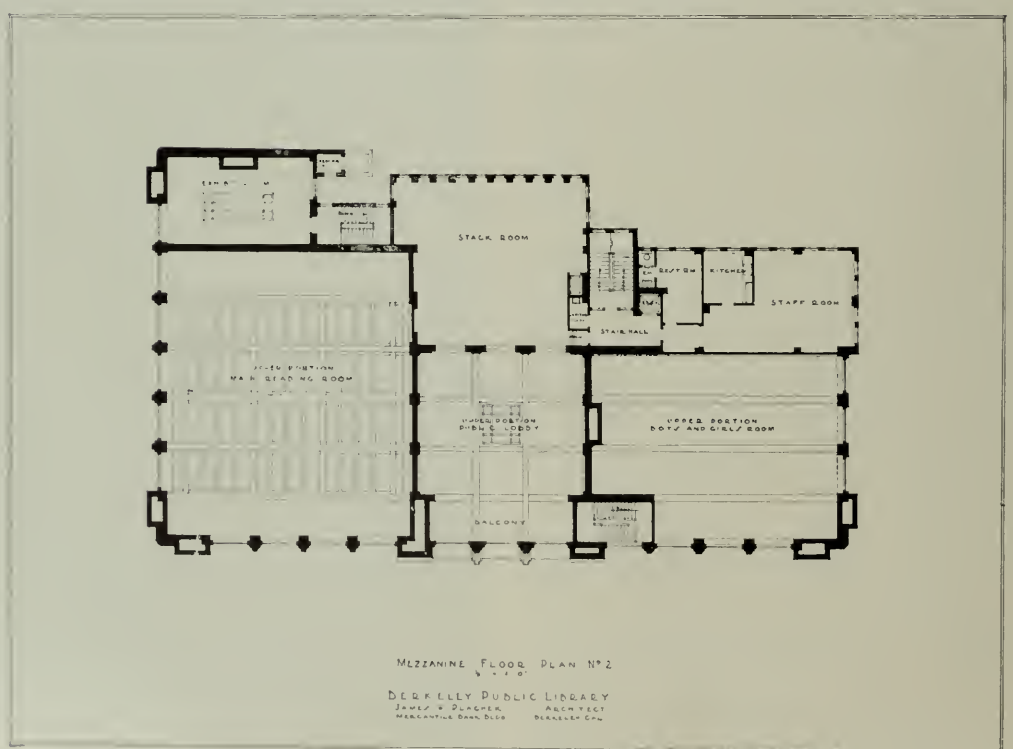
In view of the program and problems as stated by the architect, the scheme is apparently the most direct and practical solution possible, and has been handled in a direct, economical and practical way.

The main entrance is flanked by two large Pylons enriched with sgraffito panels. One enters through wide doors of bronze and chronium, into a vestibule, the walls of

CORNER OF READING ROOM, LIBRARY, BERKELEY
James W. Plachek, Architect



PLAN, MEZZANINE FLOOR, PUBLIC LIBRARY, BERKELEY
James W. Plachek, Architect



PLAN NO. 2, MEZZANINE FLOOR, PUBLIC LIBRARY, BERKELEY
James W. Plachek, Architect

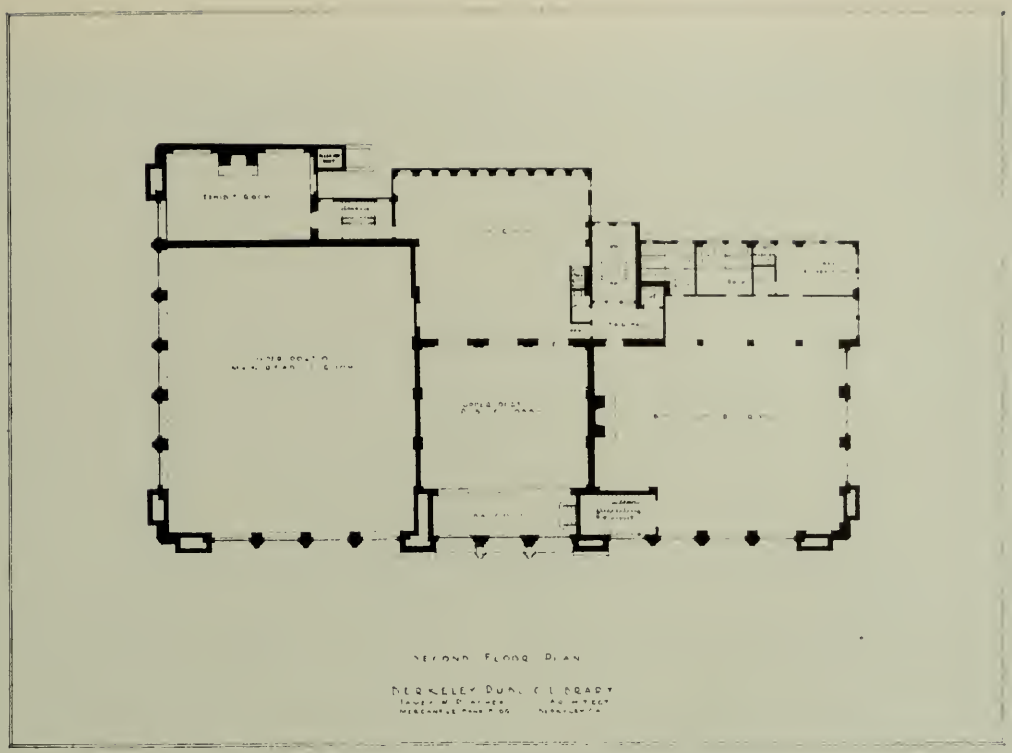
K. E. Parker Company, Builders

PUBLIC LIBRARY BUILDING, BERKELEY, CALIFORNIA
James W. Plachek, Architect

Sgrafiito by Simeon Pelenc

DECORATIVE PANEL, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect

DETAIL OF SGRAFFITO PANEL, LIBRARY BUILDING, BERKELEY
JAMES W. PLACHEK, ARCHITECT



PLAN, SECOND FLOOR, PUBLIC LIBRARY, BERKELEY
James W. Plachek, Architect

which are of beautiful Lunell marble with Tennessee marble floor.

On either side of a wide marble stair are grilles of lace-like iron. A low ascent of one-half story brings one to a large central hall where the control and distributing desks are located. Directly back of the hall are the stacks. To the left and right of the hall are reading room and reference room, spacious, high and imposing. The walls in all the main rooms are textured plaster, finished in mottled coloring. The ceilings are the concrete beams left unfinished from the steel forms, and the ceiling panels are of acoustical material. The ceiling and beams are stenciled and decorated. The floors throughout are covered with linoleum. Oak book-cases line the walls of both reading and reference rooms. The cataloguer's room is also located on this floor.

The stack area which carries up through six tiers is of considerable interest. To be up in its maze gives one the feeling of being a part of a modern German movie film, surrounded by a labyrinth of steel forms. The floors of the stacks are of Colorado Yule white marble. There are elevators for raising books. Convenient to the stacks are the cataloguer's rooms and the incoming book store rooms. The stacks are directly accessible to the circulation desk and main central hall, thereby affecting complete and simplified control and operation of the library.

The basement is taken up with newspaper room, store room, janitor's room, men's wash room, staff and locker rooms. A large area is given over to heating and ventilating apparatus which consist of air filters, warmers, heaters and fans. All rooms are mechanically ventilated. The mechanical equipment was designed by Leland & Haley, mechanical engineers.

On the second floor are juvenile reading rooms, library and cataloguer. These rooms are designed in lower and smaller scale for Berkeley's younger citizenry. The mezzanine floors contain offices of the librarian,

Photo by Gabriel Moulin

VESTIBULE, PUBLIC LIBRARY BUILDING, BERKELEY

JAMES W. PLACHEK, ARCHITECT

Lighting Fixtures by Maxwell Hardware Co.

CORNER OF MAIN READING ROOM, PUBLIC LIBRARY, BERKELEY

JAMES W. PLACHEK, ARCHITECT

women's rest rooms, staff rest room, social room and a staff kitchen.

The construction is of steel frame and reinforced concrete. The exterior is of concrete lightly dashed, leaving the form surface of the concrete showing slightly. Casually and yet observingly viewing the building, gives one the impression of a well studied and completely thoughtout scheme. All parts appear to be well put together and there is evidence that there was a friendly spirit of cooperation between the architect, contractor, sub-contractors and workmen to build a fine structure. There is evidence everywhere of a thoroughness in workmanship, a care in the finish of materials and a fitness of related parts.

Of the aesthetic considerations I quote from the architect's own description: "The building is done in the modern spirit and aptly expresses its plan as well as its construction. A conception of such complicity would result in sternness were it not for the softening influence of the sculptural work and the color notes. The character of the design is determined by the requirements and limitations of reinforced concrete and steel construction, expressing in a straightforward manner the lines of typical post and lintel design".

Of the sculpture the architect says: "The sculpture cannot be described without the building. It was the intention of the architect to keep the line between the building and the sculpture indistinguishable. The figures on top of the pylons at the corners of the building, also at each side of the main entrance, and the leaf design at the top of the slender vertical piers between the windows, are clearly a part of the construction. All the sculpture was so designed as not to oppose any butting lines and that the wall spaces should in themselves be the things of beauty. The sculpture at the tops of all pylons is Mayan in character and express just a fanciful thought in a rhythm of curves and straight lines and give a modern expression to an old art." The sgraffito panels around the base are the work of Mr. Simeon Pelenc who worked out the allegorical designs in collaboration with the architect.

The building has in its larger aspects a monumental character. It is generous in scale and, because of its simplicity, is imposing. The color is pleasing and well chosen.

The building is really not complete in its present showing and will be enhanced with the growing shrubs and planting, and the furnishings of the interior and draperies.

As a modernist one must feel that modern architecture, as distinguished from older and classic forms, should be completely modern in spirit, as well as in external design or decoration. This, I realize, is difficult to accomplish and I am not sure that the people for whom architects build are sufficiently in sympathy with modern design to permit of its successful handling. This, together with limitations of cost, has h e r e, as in most modern architecture, worked to separate the interior from the exterior design both in character and handling. The architect is hard put today to know what will express the community for whom he builds, especially when communities so generally lack a personality.

The Berkeley Library does impress one with its boldness and daring originality. In its modern treatment it does express its function and the thought and spirit that Berkeley citizens have put into its creation.

Painting and Decorating by A. A. Zelinsky & Co.

BUILDING FOR GLIDE FOUNDATION, SAN FRANCISCO

JAMES W. PLACHEK, ARCHITECT

Photo by J. Walter Collinge

FAULKNER MEMORIAL ART GALLERY, SANTA BARBARA

MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS

THE FAULKNER MEMORIAL ART GALLERY

by S. M. ILSLEY

A NOTABLE addition to the interesting architecture of Santa Barbara is the Faulkner Memorial Art Gallery, a gift to the Free Public Library, to which it forms a somewhat detached wing. The ground on which it stands was also a gift to the library several years ago by the late Clarence A. Black. The new building was designed by Myron Hunt and H. C. Chambers of Los Angeles. It faces the First Presbyterian Church, the facade of which was also their design, as well as the neighboring San Marcos Building with its delightful arcaded court. And another building to Mr. Hunt's credit is the admirable and unusual County National Bank building on State street, which breaks with the current tradition as to what a bank should look like.

The average architect asked to build a wing to a building would feel bound to design it in the style of the building whether he liked the style or not, but Mr. Hunt saw that as the art gallery was to be set considerably farther back from the sidewalk, and the connection with the library to be through a room some twenty-five feet wide, the front of which could be easily masked by trees, his problem allowed for an entirely different treatment from the library, and though it must have the same elements—a long blank wall penetrated only by a single door in the center—it must absolutely not look like a small edition of the larger building, as it would if carried out in a similar style. As it is there are two separate buildings side by side, harmonious in color, but evidently for distinct purposes. As the library has an arched door with ornamental pilasters, and a richly carved and colored tympanum, a beautiful piece of work designed by Carleton M. Winslow, the architect of the gallery was precluded from using any similar effect.

Mr. Hunt has chosen to design in a distinctly modern style, simply and logically, with nothing freakish or forced, but getting the most out of a necessarily limited cost that cut out expensive sculpture, wrought iron or originally designed tiles. He has succeeded in making an interesting and charming building, relying for his effects upon the delicate juxtaposition of plane surfaces, with the play of vertical lines running to a slightly varied skyline without a cornice. Only a trained eye can appreciate the studied art that has gone into the design, for the general effect is simple, almost austere, but its freshness and originality are a keen delight to any student of architecture. Every building that can attain such beauty of line without depending on the now academic and crystalized styles of the past, however admirable they may have been, must be acclaimed with special praise, for only a creative artist, no journeyman, can achieve such results. They are the exciting beginnings of a new style that may come to express modern, and in this country, American life. The best of the sky-scrapers are doing it, though in the over-crowded cities they are making life intolerable, and, huddled together, are no solution of urban life.

Photo by J. Walter Collinge

FAULKNER MEMORIAL ART GALLERY, SANTA BARBARA
Myron Hunt and H. C. Chambers, Architects

Photo by J. Walter Collinge

FAULKNER MEMORIAL ART GALLERY, SANTA BARBARA
Myron Hunt and H. C. Chambers, Architects

Photo by J. Walter Collinge

FAULKNER MEMORIAL ART GALLERY, SANTA BARBARA

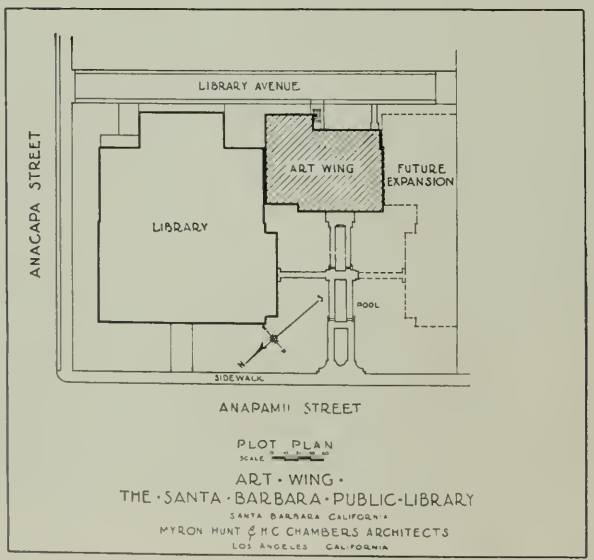
MYRON HUNT AND H. C. CHAMBERS, ARCHITECTS

But the new art may be adapted to every form of building, public and domestic, religious and commercial, high and low, and in the hands of sensitive creative artists we shall no longer be living in the fashions of foreign countries of past centuries.

The approach to the art gallery from the street is embellished with three long, narrow basins of water terraced about a foot one above the other, and each receding basin is slightly narrower than the one below, subtly adding to the perspective of the doorway as one views it from the sidewalk . Only a careful observer discovers the artifice. The door is made in vertical waves and painted a deep green, and has an interlacing pattern at the top painted purple. The panel over it carries a conventional pattern, somewhat Egyptian in feeling, derived from the California poppy surmounted by a sunburst. This was designed by John Gamble, the artist. The reflection of the colored doorway in the pool, especially at night when illuminated by a flood light, is very happy. One enthusiastic visitor exclaimed that it reminded her of the Taj.

The interior has first a long, narrow barreled, vaulted gallery for prints. Back of it is the main gallery, 35x63, 18 ft. high. The walls are covered with a warm gray monk's cloth. The lighting by day or night is admirable. The skylight is covered with gathered cheesecloth, an inexpensive yet beautiful solution of the problem, as it has a delicate texture and diffusive quality. It is gathered on hinged frames that drop down from the sides to allow of dusting, and is held in place by cords and pulleys. At right angles to the two galleries is an art book room, 25x60, well lighted from the ends, and which opens into a corridor leading into the main library.

For the present the gallery is to be used for visiting exhibitions, and there is to be no effort made to collect a permanent display. It has been opened with a show of Santa Barbara artists, forty-two exhibiting. Their work has never been shown in Santa Barbara to so fine advantage. The grouping has been done with great skill, and the room as a whole is unusually beautiful and harmonious.



PLOT PLAN, LIBRARY AND ART WING, SANTA BARBARA
Myron Hunt and H. C. Chambers, Architects

CHURCHES OF MEXICO

by EMERSON KNIGHT, Landscape Architect

ONLY those with vivid imagination can gain any adequate conception in advance of the excellence which Mexico has to offer in its churches alone. They are so richly varied in style, so monumental, forcefully picturesque and so blended with their environment as to release unbounded joy of aesthetic trend for the general tourist and an unfailing source of inspiration for the architect and every devotee of art. The meaning of these remarkable edifices—built over a period of four centuries—is deeper and far more significant than can be expressed in one brief tribute to them. For the titanic surge of religious zeal which brought these glorious churches into being—for the noble caliber of minds which conceived and grandly planned them, and for the heart, enthusiasm, integrity, and sturdiness of craftsmanship which breathed into them enduring life—we shall be forever grateful. For the peoples of the western world they are a legacy as precious in quality as are the great edifices of the Gothic and Renaissance periods to Europe.

In 1925, Mexico included 12,757 religious structures in cathedrals, parochial churches, chapels and oratorios. Of these, several hundred were then devoted to purposes other than worship, or under construction or repairs. It is interesting to note the comparative density of these buildings, by far the greater percentage of which are concentrated in the high central plateau region with Mexico City exemplifying the maximum, at its heart. In all directions they diminish in numbers until the most sparse areas are reached in Quintara Roo and Lower California. A total of 13,723 religious buildings, derived from Spanish architecture had been erected in New Spain since 1520, the time of the Conquest. Some of these were included in the area of the earlier, augmented Mexico, 28 being in New Mexico, 5 in Texas and 19 in California. Besides these, of the total number, 914 have been destroyed entirely or in part.

What powerful influence brought into being, century after century, such a vast number of noble churches? A potent spell has held the peoples of Mexico to one faith, colorful in its traditions and intensely responsive to all the magnetic vigor of resplendent ornament, appealing music and eloquent ritual. Let us reflect that Christianity was first introduced into Mexico by the priests who followed the Conquest, the devout fathers being tactful about changing the outward beauty of the religious forms of the Indians as little as possible, from Aztec idol worship to the Christian symbols of virgin and saint. It was due to their profound understanding of the psychological effect of the ritual and the careful perpetuation of its embellished forms, that such a conversion of large numbers was successfully effected in so short a time—to eventually spread over the whole of Mexico.

From architecture originating with the Persians or Chinese and transmitted through newer forms by the Arabians and the Moors, a powerful style was developed in Spain. When the followers of the Spanish Conquest transplanted this rich fusion of Orient and Occident to Mexico in the new world, it was further modified or adjusted to different materials, topography and climate—creating a new, bold, individual style, the Ultra Baroque. Massive

walls, buttresses and towers were significant of power. Immense plain wall surfaces were broken at wide intervals by elaborate, concentrated ornament giving emphasis to doorways, windows, domes and lanterns. It is the forceful influence of these marked contrasts which gives dynamic vitality to the architecture and such a high degree of pleasure to the aesthetic sensibilities.

While it is profitable to absorb the valuable discussions on Mexican architecture fused with Spanish works; the genuine Mexican Type, which is distinguished by its specific characters from what has improperly been called by all those who have dealt on viceroyal architecture, either Spanish baroque, churrigueresque, or platersque, etcetera.

"This *Mexican Type*, which has very different modalities but all subject to a very firm aesthetic sentiment, we have given the name of *Ultra Baroque*. It

A CHURCH IN GUANAJUATO. THE FORMS OF NATIVE CACTI SEEM TO HAVE INSPIRED THE ARCHITECTURE AND ITS SILHOUETTE

by such authorities as Sylvester Baxter and Louis La Beaume—as revealing the observations and thought of the outlander—it is also well to consider the modern point of view emanating from the cultivated Mexican of today and to quote in translation from the Spanish text, the conclusions of Dr. Atl in his preface to Volume Six of the *"Iglesias de Mexico"* (Churches of Mexico), published in 1927 at Mexico City.

"The study of the constructive and plastic elements of the Mexican Churches, in relation to the architectural production of other countries, brought to us the knowledge of a type that heretofore has been constitutes, as the Italian or the Spanish baroque, an expression revolutionary, violent, arbitrary in the majority of cases, very individual and following the classic baroque ostentatorial organization, but more ornamental, and adopting the multicoloring as a fundamental part of its modalities. The real importance, the transcendental value of these monographies, consists in having demonstrated that in Mexico there was produced an architectural art of distinguished plastic and constructive characteristics, that differs from Italian and Spanish productions, from which, undoubtedly, it derives.

"The Minister of Finance, when publishing these monographies, realizes a work of great cultural importance, and shows the only way that should be followed to write in the future a thorough history of the art of Mexico, and to analyze and compare the plastic expressions of the country so that they may be appraised and categorically defined."

The glory of these churches lies in their domes and towers, which, due to the admirable sites chosen for the structures—dominate the rugged landscape. They seem literally sculptured against a background of intensely blue sky, of dramatic cloud masses or of glowing mountain ranges. There is infinite variety and fascination in the design and scale of these bold major features, in Spanish called cupulas or media-naranja (half orange)—the domes forming in the aggregate, perhaps, the most valuable study in this form, in any single country on the globe.

Some domes are of solid masonry, entirely undecorated—the earlier types being low, approximating the hemisphere, the later ones more uplifted. In richer edifices, the domes always of graceful contour, and covered with glazed tile—lend to cities and countryside the quality of singing color. In certain instances, the tile is all of one color as in the case of the great monochrome yellow dome of the Cathedral of Puebla. But frequently the ribs of an angled dome are emphasized by tile of one color while the intervening panels are filled with masses of a single contrasting color. Again, the color scheme may be frankly polychrome, the rich geometric patterns being composed of glistening greens, blues and yellows or other vivid, harmonious hues.

Photo Courtesy National Highway Commission of Mexico

MAJOR CLOISTER, CONVENT OF SAN AUGUSTIN ACOLMAN, NEAR SAN JUAN TEOTIHUACAN. NOTE FORCEFUL BEAUTY IN STONE CARVING

The great domes are most often built up from an octagonal base and are surmounted by lanterns perfect in proportion and grace —their roofs of smooth tile echoing with accuracy and charm, the color motifs below. It is not only possible to see a number of well designed and powerfully picturesque churches in one small town—each dominated by its individually fine dome but it repeatedly happens that a pleasing composition of domes occurs in a single church

or convent, because of the use of lesser domes over transepts, altars or chapels.

There are many examples wherein from three to five domes may be found in a given structure and their fine grouping must be seen to be appreciated. Thus domes of striking design and persuasive silhouette delight the eye of both tourist and artist and live long afterward in memory—as inspiringly as a noble soul, a great book, or a symphony.

The architectural merit of churches in Mexico is often greatly enhanced by their environment of trees. This is true especially in the cities where few religious edifices of importance are not flanked along one side at least by delightful plazas. The trees found most frequently in such formal parks, offering grateful foliage shelter from the burning sun and seemingly imbued with exaltation—include the tall ash, the poplar and willow, palm, olive and orange, the tamarindo and the Indian laurel. The latter is a broad leaved evergreen with dense, glossy dark foliage of striking beauty.

In such centers as Mexico City and Guadalajara, Guanajuato and Queretaro, the churches are positioned in a manner to provide gardens fronting the street within their property lines and these are bounded at times by wrought iron fences of remarkable grace. Conifers of erect habit, complement the bold verticality of facades and towers as in the case of the cypresses on the stone terrace fronting the Cathedral of Guanajuato.

FACADE OF THE CONVENT OF SAN AUGUSTIN ACOLMAN, NEAR SAN JUAN TEOTIHUACAN

At Amecameca, when climbing the long ramps of the Sacro Monte, the mosaic pavement leading upward past the Stations for Prayer, is overarched by patriarchal ahuehuete trees, their drooping branches rendered even more graceful by long trailing garments of moss.

Superbly exotic is the vista of a church crowning a hill in Guanajuato—enframed by clusters of tall organ cactus, whose rounded spikes reproduce forcefully the outlines of tower and dome—with a magnetic effect of purity and stern grandeur. Plant life in the form of small trees, shrubs and creepers lends accidental charm to weathered walls, buttresses and domes, being born of windblown seed, nourished by tropical rains, and growing with happy abandon from cracks in high places, to become the significant accompaniment of such fine old churches as are encountered in Guadalajara and other cities of the plateau region.

After being moved by the exterior of these magnificent churches—where we have feasted on color and beauties of mass and detail—our joy heightened by the effect of intense, luminous sunshine contrasted with deep shadows of velvet blackness—we enter their portals to explore in reverent mood, their treasures of the interior.

Often we find them bereft of their former grandiose furnishings. Gone are the frescoes and paintings, iron and bronze grilles, crisply carved wood and massive bold altar carvings of deep relief, covered with plaster and heavy pure gold leaf. But even in such cases the interior proportions are universally satisfying, the great unbroken surfaces of the thick walls breathe quiet, while the deep wall windows and the higher ones in the drum of the dome cast just enough

of mysterious and hallowed light. The old floors of warm red tile are worn uneven by the feet of countless worshippers through many generations. At almost any hour poor Indians mantled in black may be found devout in prayer before some favorite shrine. A lone candle burns before a saint and the sanctuary is charged with silence. From this hushed atmosphere we may tiptoe into the sacristy to see a domed ceiling masterfully colored in mosaic or review the rarely embroidered robes of priests unveiled from carven cabinets. We may stray into the fresh air of the cloisters and pace the stone vaulted aisles rich with chiseled column, capital and arch. An ancient stone fountain with a low coping graces the center of the garden plot, peaceful and gay with tropical green plant life, lizards and singing birds. The sun floods in its blessed warmth. It is not difficult to picture the old fathers rapt in meditation and something of the life they led, intimately linked with the joy and pathos of both Indian and Colonist from Spain.

Mexico possesses numerous churches and convents which still are endowed with a wealth of decoration and furnishings, vividly recalling days of pomp and magnificence. Such splendid examples are to be found in Mexico City, Cholula, Puebla, Oaxaco, Queretaro, Taxco and Tepotzotlan. The intricate, elaborately carved Baroque retable in these sumptuous churches fills the entire end of the nave back of the high altar. It includes many miniature paintings and figurines, the whole presenting an overwhelming mass of virile carving, lavishly covered with gold leaf. More retables, equally elaborate, extending from the floor to the full height of the nave may also be found in the transepts or in a series of bays of some churches. It would be difficult to convey the variety of conception, intricacy, scale, boldness and feeling of unloosed grandeur in these vast, carved, fantastic compositions. They seem alive with saints and cherubs, some fully of life size, the relief being from a few inches to two feet in depth. Only because minor details contribute to the effect of the magnetic whole and only because they seem fitting in their environment, are these retables saved from being too overpowering.

The writer recalls one impression of such an interior which still vibrates in memory. It was when he first entered the Parochial Church in the mountain town of Taxco, in Guerrero, to attend a Rosary service at dusk on a Sunday in early October. The resplendent, massive gold altar was rendered even more golden by electric globes, by countless yellow candles flickering in golden candelabra, and the effect heightened by masses of wild orange marigolds, plucked fresh from the fields. Incense wafted its pungency in blue smoke clouds, the delicate gilded old organ from Italy echoed from the loft with a far-off sweetness, complementing the solemn, droning chant of the priest, the clear appealing voices of women and children and the mellow mingling flood of tone from the wheel bells turned by the acolytes. Such was the scene of gorgeous color and almost Pagan glory of ritual, compelling in its beauty—an hour never to be forgotten.

DETAILS OF EASTERN FACADE OF THE PAROCHIAL CHURCH OF TAXCO, IN GUERRERO

Photo by Emerson Knight

THE CHURCH OF ALAMOS IN SONORA, FROM AN ARCADE

Photo by Emerson Knight

FACADE AND PORCH OF THE CATHEDRAL IN GUANAJUATO

Photo by Emerson Knight

DOME IN CUERNAVACA, VIEWED OVER WALL OF BORDA GARDENS

Photo by Emerson Knight

REAR VIEW OF THE PAROCHIAL CHURCH OF TAXCO

PROBLEM OF THE FARM HOUSE

by WM. D. BRINCKLOE

THE October issue of *Agricultural Engineering* (the Journal of the A.S.A.E.) lies on my desk. It's the special building number—and I turn to an article by J. L. Strahan, of the Louden Machinery Company—"The Need for Research in Farm Structures."

Here's a sample paragraph: "Now what does the business farmer get when he goes to the architectural profession? He gets nothing unless the architect is in a starving condition, and what he gets is just a shame. As a matter of fact the successful architectural practitioner has no time for him. And the unsuccessful one has no knowledge of the agricultural engineering principles involved in farm building design. This situation is exactly what is to be expected. The farmer himself is so ignorant of the economic status of his building program that he wouldn't hire the most competent agricultural architect in the world; if there was one, principally because he thinks he can't afford the fee."

Absurd? Not a bit of it! As a matter of fact, Mr. Strahan had referred this article, before publication, to the President of the Institute, who in turn requested me to read and report. Some things in Mr. Strahan's paper I criticized adversely; but the particular paragraph above quoted had my hearty approval. It is cuttingly blunt; but absolutely true!

"Yes, true for a dairy-barn, perhaps," snaps out one of my professional brethren, "but does this idiot mean to say that I or any other architect, can't design a farmhouse?"

"Precisely that," I respond, and I mean to say it, too!

Years ago I was asked by a farm magazine to contribute a farmhouse design every month. So I sorted out some of my most successful suburban cottages and published them; but somehow they didn't seem to go over. I said to myself, smugly, "Oh, those hick farmers are too dumb to know a good design when they see one, that's the trouble!"

Then, one day, came a letter, ill-spelled, poorly written, scribbled in pencil on a sheet of scratch-pad paper:

Dere Mr. Brinckloe,

That little scetch you printed was real prety; but it ain't no use to farm folks like us. You got the bath room up stares, witch ain't right when you ain't got running watter like we ain't, and got to carry it from the kitchen range tank. And you got the stares at the front, and ain't got no wash room like, witch the men kin come into and leave thare coats and boots without messing up my kitchen. Why don't you show us some real farmhouse plans?

Mrs. Tom Smith.

I laughed as I read it; then I re-read it, and didn't laugh. Was she right? Perhaps. Must a farmhouse plan be entirely different from a suburban cottage plan? After all, what did a city-bred chap like myself know about farmhouse life?

I went to the editor of The Farm Journal. "Look here. We're both guessing as to what the readers want. Let's run a house-plan prize contest; then we'll know."

"Guess you're right; go to it," he said.

So I ran the contest; it produced thirty-five hundred sketch-plans and letters. Mighty crude they were, of course, yet tremendously illuminating! I realized fully that I hadn't known even the elements of farmhouse design.

Since then, I have run similar contests for the Country Gentleman, and various

other farm periodicals. The results have merely confirmed the conclusions I drew from the first contest.

Now, what are the fundamentals of farmhouse design?

1. Let us remember that on the farm, the family enter and leave by the rear door (not necessarily the kitchen door, however). The fields, the stables, the poultry yard, all lie back of the house. Even if the wife wants to visit a neighbor, she must first go to the garage, and the back door is the nearest to that. Whereas, in all other houses, the route to shop, office, store, or neighbor, lies via sidewalk, bus-line, or station; and the front door is the most direct way. It's all right to put hall and stairway at the front of the town house; but on the farm, these must be at the rear.

2. The farmhouse cellar is used far more than the town house cellar; firewood, winter vegetables and fruits, and sometimes even incubators are kept down there. Hence a convenient "grade doorway" is needed, instead of an outside hatchway. The favorite scheme is to have the grade door open on a landing from which one goes down to the cellar or up to stairhall. This gives the desired rear entrance to the house, without multiplying doors.

3. Three times a day the farmer, his sons, and his hired men, come tramping in to meals; boots and clothing messy with mud, dust, chaff and a hundred other defilements. The city man's work is usually far cleaner; even if it isn't, he has shaken off the worst of the dirt during his journey home. Therefore, the farm woman demands a small washroom or lavatory, entered directly from outdoors, where the men can shed miry boots, mussy overalls, dripping raincoats, etc., and then wash up a bit.

4. The farmhouse kitchen is entirely unlike the ordinary kitchen—differently placed, differently equipped, and decidedly larger:

(*a*) A question of psychology governs its position. "I want a window directly over my sink, with a view of the road," writes one farmer's wife. "It's a great comfort to a lonely woman, spending hours in her dishwashing and cooking, if she can occasionally see someone passing by." And many hundreds of other farm women have written me the same thing. It is significant that before the coming of the automobile, the majority of the inmates of state insane asylums were farmers' wives; the utter loneliness during a great part of the day, with no new subjects for thought, literally drove them insane! Hence the kitchen must be at the front, or the end, of the house; not the rear.

(*b*) Town or suburban menfolk eat only two meals at home; sometimes less. But the farm housewife must cook and serve breakfast, dinner and supper for several hard-working men who demand heavy food and plenty of it. Her work is twice as heavy, and lasts twice as long. But she can cut corners a bit if most of the meals are served in the kitchen. A breakfast-nook set (table and two benches) in an alcove, is the choice of most farm women. In any event, the regular kitchen work-table is needed for other purposes, and cannot be used for meals.

(*c*) Gas or electric ranges are impossible or impractical on the farm. In winter, a wood or coal range is used; in summer a large oil-stove. Space for both must be provided, so that in spring or fall, either may be used, according to the weather. The ordinary kitchen has space for only one stove.

5. Regardless of the mossy old jokes about Farmer Corntossel and his annual bath, I find that practically every farm family wants a bathroom. But this room *must be on the ground floor, very close to the kitchen.*

Why?

In town or suburb, it's only a question of connecting to the public water and sewer lines, at a nominal cost. But on the farm, a water-system and sewage disposal plant will cost from $500 up. This expense, added to a complete bathroom installation, is beyond the means of the average farmer. Therefore, I find, the usual custom is to install only a bath-tub, with a cheap hand-pump at one end, drawing cold water from well or cistern. Waste water runs out into a ditch. A suction pump is not practical

much more than fifteen feet above water-level; hence a second-story bath is not feasible. Moreover, hot water must be carried from the open tank on the kitchen range, and it's out of the question to lug this water away upstairs! Hence, the very great majority of farmhouse plans in my various contests showed a bathroom near the kitchen.

Very frequently a chemical toilet is put in. Obviously, that is far more practical in a downstairs bathroom. If the toilet is a big one, the tank must be buried underground or set in the cellar; and the big open soil pipe leading to it must be vertical. The longer this pipe, the more foul and offensive it gets. If a commode type of chemical toilet is used, the bucket must be frequently emptied, and that means a lot of extra labor, if upstairs.

6. At least one first-floor bedroom is a necessity in a farmhouse, for many good reasons.

Some of these given by farmers' wives were: An aged grandparent is too infirm to use the stairway; a young baby must take its nap within hearing of mother; the farm woman wants to hastily fix herself up a bit for meals, but hasn't time or strength to run upstairs; the farmer wants to be able to go out at a second's notice, if he hears something wrong at night about the stables; and so on.

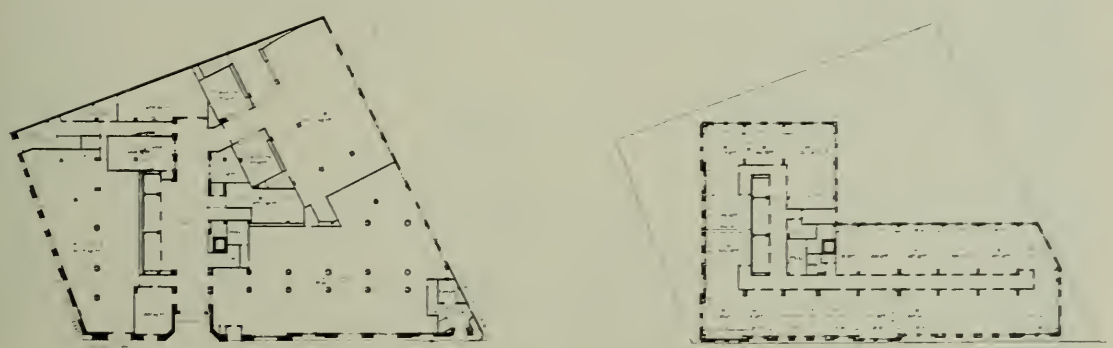
7. A large kitchen porch, properly screened (and perhaps enclosed with glass for winter) is a necessity to most farm women. The reasons are too many and complex to give here, but most of them are perfectly obvious.

8. On many general-purpose farms, a large number of extra harvest hands must be fed occasionally. Therefore, the living room and dining room must be easily thrown together, so that the long table for the "threshing dinner" can be set out. On specialized farms (such as poultry ranches) this is not necessary.

9. More and more, the modern farmer is demanding a little office, where he can work at his accounts, study his bulletins and market reports, pay his men, bargain with crop-buyers and salesmen, etc. Farming has become a highly technical profession and a highly competitive business; the farmer needs his private office, just like any other professional or business man.

These paragraphs are a sketchy outline of the requirements of the modern farmhouse. Is it any wonder that most architects, as I did, make complete failures when they first try to plan farmhouses, without a special study of the requirements? Is it any wonder that farmers and agricultural engineers have small confidence in us?

Is there any reason why the architect should not take far greater interest in farmhouse architecture than he does?



MARINE OFFICE BUILDING, VANCOUVER, B. C.
(See Following Pages)

Photo by Leonard Frank

MARINE OFFICE BUILDING, VANCOUVER, B. C.

McCARTER & NAIRNE, ARCHITECTS AND STRUCTURAL ENGINEERS

THE MARINE BUILDING, VANCOUVER, B. C.

COMPLETION of the new Marine Building marks another epoch in the history of Vancouver's architectural progress. Situated close to the waterfront, this towering mass dominates the city's growing shipping industry in bold relief.

The building, in its architectural conception, suggests some great marine rock rising from the ocean, clinging with sea flora and fauna, tinted in sea green, flashed with gold —at night a dim silhouette piercing the mists.

The Marine Building was conceived by Lieutenant Commander J. W. Hobbs, R. C. N. R., in 1928. Impressed by the soundness of Commander Hobbs' ideas for the structure, Lieutenant Colonel F. G. Johnston, M. C., President of G. A. Stimson & Company, Ltd., of Toronto, the oldest bond house in Canada, offered that firm's services for the financing of the building.

The trustees of the Vancouver Merchants' Exchange heartily endorsed the project and contracted to take space in the building for a period of ten years from date of completion. The need for the centralization of firms engaged in the import and export trades and shipping had become increasingly evident.

In deciding upon the location for the Marine Building, two factors were essential: First, a central position in the financial district, and, second, proximity to the waterfront. The site selected fulfilled both of these conditions.

The building is of the Class A type and contains approximately 160,000 square feet of rentable area.

The main shaft of the structure is built in buff-colored brick, the copings crowned with terra cotta and ornamented with marine growth and life. Note Neptune with his trident looking down from the terminals to the splayed corners of the building. In fact the "tout ensemble" of the design adequately expresses the manner of business housed within its walls — firms engaged in import and export trade, shipping, lumber, insurance, etc.

Speaking of the mural work in the entrance lobby a writer says:

"The massive entrance, unique in character, shows the sun setting over the Lion's Gate to the Orient, with the wild geese homeward bound; also the full-rigged ship entering the portals of our harbor. Of particular interest is the story told in the mural panels on each side of the arch, beginning with the early days of 1577 when Drake in his 'Golden Hind' sailed the Pacific. It was many years later, in 1775, when Quadra the Spaniard, visited this Coast in his ship, the 'Sonora.' About the same time Cook on the 'Resolution' made further settlements, Nootka Sound in particular. Finally we have the famous Vancouver on his 'Discovery,' who in 1792 laid the foundation of the City of Vancouver. This is the romance of the sailing ship. On the right hand side of the entrance arch we next have the story of the age of steam: Beginning with that sturdy little craft, the 'Beaver,' 1835, which came to grief on the rocks near Prospect Point. Then we have H. M. S. 'Egeria,' a ship which made many surveys of the British Columbia coast in 1898. Now we come to the present age of the Canadian Pacific liner, the early 'Empress of Japan,' which for many years plyed her way across the Pacific to the Orient and back, until she is now replaced by that magnificent ocean liner bearing the same name."

The Marine is said to be the largest and tallest office building in Western Canada and is exceeded only by one or two buildings in the entire British Empire.

ENTRANCE LOBBY, MARINE BUILDING, VANCOUVER, B. C.

McCARTER & NAIRNE, ARCHITECTS AND STRUCTURAL ENGINEERS

WHY WOMEN FIGHT WITH THEIR ARCHITECTS

by HAROLD STERNER in "Vogue"

ALTHOUGH there may be some where in the world a lady fortunate enough not to have quarrelled with her architect, it is certain that the majority who have built houses will feel that the title of this article indicates a general truth.

The sources of these quarrels are legion. The house always seems to cost more than the client expected (that is to say, more than she would like it to cost, for expectation is always founded upon optimism); closets turn out to be smaller than the impression of them gained from the blueprints; and the room that was supposed to have a Directoire character has somehow or other become Adam. Nor are these disputes by any means less unpleasant because the architect is able to find an answer to many of his client's complaints and disappointments.

Unfortunately, it is far easier to describe such incidents than it is to find the remedy for them. These difficulties often arise because the association formed between the architect and his client has for its object the solution of a very personal problem, which usually ends by involving as many personal sensibilities as a divorce suit and which can not be solved by adherence to a well-understood business code, as in the purchase of an automobile.

Because she knows that so much of the building of a house is going to touch upon her intimate feelings, it is difficult for a woman to choose her architect as impersonally as she should. She foresees hours spent determining the colour of a room and choosing its furniture, and hence she is influenced by the consideration of whether or not the architect appears to have a sympathetic personality. The ideal architect should be a charming and amiable man, a creative genius, and a superlatively efficient executive, as well, but this combination, through some perversity of Nature, seldom occurs. The woman client would be much happier in the long run if she chose her architect on the strength of his professional reputation, regardless of his assets as a dinner-guest. She should remember that building is necessarily hard work and that talent and efficiency therein are not based upon the same qualities that make an agreeable companion at cocktail time.

Granted that many women are disillusioned enough to trust their houses to professionals rather than friends, there is still a lingering inclination on the part of the sex to choose their architects on the basis that, if a man seems sympathetically enough impressed by their own needs and tastes, at least nothing definitely unpleasant will take place. This leads to a purely negative result. It is wiser, if one is not equipped to design a house oneself, to entrust the undertaking to someone who has definitely formed tastes and enough character to fight for them.

Then, again, many of the disappointments that occur are the result of an initial enthusiasm, which frequently carries away the architect as much as it does the client. This attitude, pleasant as it may seem to both sides, leads to complications in that each person is apt to accept certain things as understood when it is not possible to determine them rigidly. Many women build-

ing houses do not realize that some elements of a house are established by choosing the lesser of two evils; that is, they do not permit of a perfect solution in relation to some other problem. For example, the perfect window has never been designed. Double-hung windows are never as agreeable or efficient as casements in very hot weather; casements that open in are almost sure to leak in our rigorous climate and are apt to interfere with curtains when they are open; while windows that open out involve the annoyance of opening the screen whenever one wishes to get at them and can not be made very large on account of the dangers of high winds. A serious technical study of these problems would bring to light a great many more difficulties and would fill a great many pages. It suffices to say here that a compromise of some kind is the only solution; and yet some women have the greatest difficulty in hiding what they are generally intelligent enough to recognize as an unreasonable sense of pique when confronted with such limitations.

The client may wonder why she has to concern herself with certain technical matters at what may seem a very early stage of the work, but the slight impatience that may arise over the really careful consideration of these problems is not serious compared to the annoyance at having to spend money on subsequent modifications and changes.

PORTRAIT OF AN ARCHITECT AS HIS CLIENT SETS SAIL FOR EUROPE

Too Literal Reproductions

Many a woman has suffered the experience of asking her guests to sleep in a room that she guiltily knows to be suffocating, simply because she has demanded from her architect a replica of a Cape Cod farmhouse and because he, lacking the courage to point out certain truths, has carried out his task in a spirit of literal obedience and designed tiny double-hung windows. Had he, on the other hand, at the risk of seeming didactic, been outspoken enough to remind his client that the early Cape Cod settlers were not concerned with summer warmth, but with protecting themselves from the long, bitter winters, and had hence deliberately made their windows small, the lady in question would at least have been forewarned as to the dangers of copying too faithfully a bygone style. It is the task of the architect to put before his client the basic difficulties, the choices offered, and the sacrifices each choice entails and to see that the client has realized them fully before the work proceeds at all far.

Few people realize the tremendous advantage of having sketches and drawings made over a long period before they intend to build a house. Not only is the architect benefited by the opportunity it gives him to study the needs of his client and find the best solution for them, but the client is able to consider carefully the various practical demands she has made and discover whether they are compatible with the character of architecture that appeals to her; in short, to make up her mind about those things that must be definitely decided before a contract can be let. It is undeniable that, while they are planning their houses, women are influenced by things they have seen in museums or in the houses of their friends, and their momentary enthusiasm tempts them to ask the architect to incorporate these fragments from here and there into one house. Under such circumstances, it will not be surprising if the house lacks the feeling of unity that above all others it should possess.

It is impossible to design anything more than a trick house if a client insists on a different style in every room, no matter how perfect each room may be, and yet the architect who expresses a reluctance to make such an assemblage is sometimes accused of possessing little versatility or is dismissed as a "purist."

There arrives a point in the creation of every house when interference with the architect is, to say the least, precarious. Generally speaking, unless the purse of the client is unlimited, this point is the signing of the contract with the builder. Up to such a time, changes and revisions involve a loss of temper at the worst, but, afterwards, they involve a great many dollars, as well. So true is this that some of the happiest clients to be found are those who have gone to Europe while their house was in the actual process of construction.

At the signing of the contract, the work moves into a technical realm with which the average layman is poorly acquainted, but the exact boundary of this realm is extremely difficult to determine. In the case of a portrait-painter, for instance, it is far simpler to define it. It is obvious that, after the sitter has decided on the costume she will wear and, if she chooses to, the pose in which she wishes to be painted, there is nothing more that she can do to control the result, and it would be manifestly ridiculous for her to step down from the model stand and guide the hand of the painter.

It is, of course, quite true that architects have often been prevented from making mistakes, even of a technical kind, through some happy suggestion or intervention of the client, but these errors should be discerned and corrected in the early stages of the work. A great many such mistakes could only indicate one thing—that the architect was inefficient or at least unsuited to carry out the particular commission entrusted to him. In either case, it is far better to terminate the relationship politely and start anew than it is to try to muddle through with the undertaking. If, on the other hand, in the preparatory stages of the work, the architect has justified faith in his artistic and technical ability; if he has shown in his sketches of the facade and interiors that he understands the character of house that is wanted; and by the arrangement of the plan that he is fully conversant with the utilitarian needs of his client—then it is the part of wisdom to remember that his work will possess far more originality and unity if he is left unhampered in its execution.

Feminine Conservatism

Future generations looking back at the domestic architecture of the present day, whatever they may have to say in praise of its refinement, will certainly be amazed at its timidity in design and its almost pathetic lack of inventiveness; and, when one considers that in a vast majority of cases it is the woman of the household and not the man who determines with the architect the appearance of our houses and apartments, it must be admitted that some of the blame for this timidity rests with the woman client of today. Women are notoriously more concerned with what other people will think than men, and it is not to their credit that they have allowed their fears of not being in "good taste" to get the upper hand to such an extent that they succeed in paralyzing the creative faculties of their architects by asking them to work in an absurdly lim-

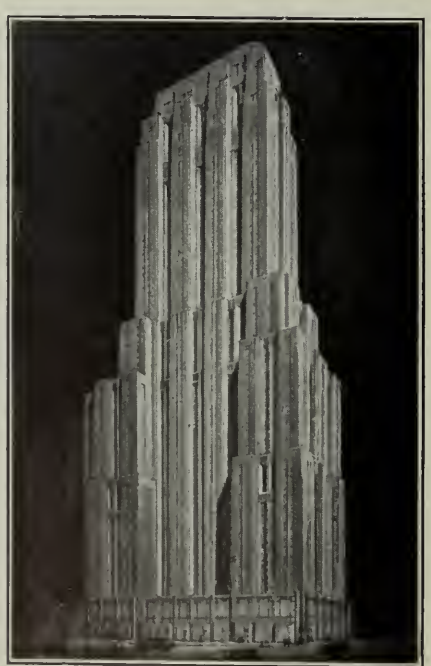
"BUT WHY DIDN'T YOU TELL ME THAT A TERRAZZO FLOOR LOOKED LIKE THAT"

ited aesthetic range. Even our modern interiors have become, in the hands of women, not the innate and soberly evolved expression of a new mode of living, but a hastily adopted fashion of necessarily superficial values.

In the past, it was usually the man of the family who concerned himself with the building of a new home, but there are instances where women played the role of client, and one imagines that they were less prone to quarrel with their architects than the women of today. Madame Du Barry had the enthusiastic vanity to demand a new style as a background for her career and as evidence of the prestige she had obtained, but it is certain that she relied on her personality to indicate the general character of the style she desired and had the innate sense to know that beyond that she must trust to the creators.

To choose as an example a famous courtesan living in a day when the utilitarian details of a dwelling were of the greatest simplicity and with unlimited wealth at her disposal may seem unfair, but, if it is impossible for the American housewife to be as casual as a king's mistress about the disposition of her pantry, she can, where aesthetic matters are concerned, learn a lesson in assurance from such a woman as Du Barry.

It seems a pity that so few women in America have been willing to gamble in this way on the talent of an architect, nor is it such a gamble when one remembers that they can so easily inform themselves about the caliber and character of any architect's work. Such confidence might well be worth while, for, even though the door of a bedroom closet might be found to open the wrong way, the lady who put up with such an error might at least find herself going down to posterity as the first mistress of some Westover or Monticello of the future.



SPAIN

A Portfolio of Camera Sketches

by **Lothar C. Maurer**

V. Farm Houses

SMALL HOUSE, ZAMORA

FARMHOUSE NEAR ANTEQUERA

SMALL HOUSES, ZAMORA

FARMHOUSE NEAR ANTEQUERA

SMALL HOUSE, CARMONA

EMOTIONAL ARCHITECTURE

by WILLIAM G. AGNEW, A. I. A.

THERE are always these two factors in good architecture — the scientific and the artistic—and the architect must be both dreamer and engineer. In architecture, always keenly conscious of the past, supremely expressive of the present, there is a continuous and vivid commentary of human existence.

It is difficult to conceive of anything emotional in steel and concrete. It does exist, however. Because architecture does not tell stories or represent actual events, it can not work as directly on our sympathies as words or pictures. Although there are love poems, love stories, and love music, love architecture is inconceivable. Because of this fact, we forget that there are a great number of emotions which architecture can and does express and expresses with the greater force because of the abstract means at its disposal. This force is the result of the fact that the form, which acts directly upon the eye, and the matter which acts upon the intellect, are so closely interwoven. This identification of form and matter makes architecture most closely analogous to music; in fact, architecture has been called "frozen music"—not because of any similarity between the architectural forms and musical forms, architectural rhythms and musical rhythms, but because in both great architecture and great music, it is impossible to conceive of the existence of the form apart from the matter.

* * *

The landscape, or the figure, may have real and definite existence outside the painter's canvas. Both would produce emotions at least partially the same, no matter how treated. Imagine a great Gothic cathedral, the high piers soaring up to arching vaults overhead. On distant altars, terminating long vistas, candles burn with warm radiance; all of these many forms mellowed and softened by the glow of light from the rich color of the stained glass windows. The emotional effect is one of overpowering peace, quiet and reverent awe. Now, imagine a church void of these lovely forms —remove the stained glass and lacelike tracery, the clustered shafts, the pointing arches and shadowy vaults. The emotional effect has fled, for it is inherent in them. Its very being is one with their being and is completely identified with the form which produced it. Surely everyone has felt the emotion of immense power and strength at some time in the presence of some great building. Lower Manhattan, with its tremendous skyscrapers, impresses us with the magnitude of our age. Building materials themselves, if properly treated, will give the impression of permanence and great strength. It only remains for the architect to use them in a simple and expressive way and his building will appear strong.

Peace is often felt in the presence of good architecture. This emotion is more subtle than the sense of power and more beneficent. Where heavy weight is strongly supported and where there is simplicity of design and careful harmony of proportion, there is always a subtle influence making for rest and repose. One may nearly always see people sitting around the base of the Boston Public Library or the New York Public Library, resting under the peaceful influence of good architecture. Anyone viewing the Lincoln Memorial in Washington is impressed by the repose offered by this veritable architectural masterpiece.

There are lighter emotions, too, which have their place in architecture. The architecture can express gaiety, playfulness, relaxation, like a piece of music or paint-

ing. Our exhibition architecture has a great amount of this quality. Certain portions of the San Francisco Exposition of 1915 were like solidified laughter. A theater or ballroom, gay with color and exuberant ornament, gives promise of a feast of enjoyment. Remember always that the architect is only a man; he need not always be solemn, nor need he forswear gaiety, provided only that he make his gaiety beautiful. All good architecture should have this gift of expressiveness. Every building, every well designed room should carry in itself at least one message of cheer, or rest, or power. Study the buildings around with this in mind. Soon, some will take on new values; they will become vital with their message—others will remain as before—vague, grey, lifeless things. Those, which seem alive with some message, are true works of art; the others may not be actually very bad in design, but they are never great, for their architecture has failed in one of its most important duties.

* * *

By far the most important of all the pleasures which architecture can produce is the joy of noble inspiration—that big sense of awe and reverence that comes only when something has struck deep at the foundation of our souls. It thrills one as he enters the dim, tremendous quiet of Notre Dame at Paris. It is the joy which sings in the gorgeous glow of richness of color and ornament in St. Mark's at Venice. It is most frequently associated with religious buildings but is by no means confined to them. It can come from small structures as well. It is very excellently portrayed in Bramantes' charming Tempietto in the courtyard of S. Pietro in Montorio at Rome, or the Hospital of the Innocents at Florence. It is as independent of a building's age as it is of its size; it is the result of perfection and may exist in a building a year old as strongly as in one a thousand times its age. It is felt when one enters the hushed immensity of St. Peter's at Rome and may overwhelm one as well in the concourse of the Pennsylvania station in New York—that great vaulted interior which swallows up its crowds and stills their tumult.

AVIATION STIMULATES CENTRAL AMERICA TRADE

AVIATION is making it possible for the American businessman to heed the call of the "Seven Sisters of the Caribbean" and turning that one-time rendezvous of pirates and buccaneers of the old Spanish Main into a mart of trade.

The "Seven Sisters of the Caribbean", Costa Rica, Guatemala, Honduras, Nicaragua, Salvador, Panama and British Honduras, have welcomed Americans, and American dollars, and today the record of imports and exports is remarkable.

Land of the seven sisters has been the setting for many a stirring tale of adventure! Scenes of conquest, revolution, intrigue! Land of tropical jungles, sun-baked strands, smoking volcanoes, ancient ruins, cocoanut palms, ox-carts, pack-mules, tortillas, fiestas, plazas and patios.

Much of this remains, but Col. Halsey Dunwoody, Executive Vice President of Universal Division, American Airways, Inc., tells of the new life of the seven sisters, their interest in progress and their growth and development which has been aided by aviation.

Central America takes flour from Omaha and Minneapolis; lard and machinery from Chicago; cotton goods from the mills of Tennessee and Alabama; automobiles from Wisconsin and Michigan; shoes from St. Louis; case oil from Louisiana; lumber from Mississippi; washing machines from Iowa, and clothing, radios, musical instruments, pumps, iron and steel products, dairy products, paints and hundreds of other items of trade from widely scattered parts of the United States.

From 1914 to 1928 the foreign commerce of Central America increased from $97,000,000 to $236,000,000 a year. Of this the United States received $55,000,000 in 1914 and $127,000,000 in 1928. The percentage of gain during the 14 year period is 143 percent of which the United States gain was 132 percent. It is a striking fact that today the per capita trade of Central America with the United States is nearly double the

per capita trade of such great commercial nations as Germany and Japan with this country, and more than double the per capita trade of France and Italy with the United States.

"The American business man 'loves' figures", Col. Dunwoody says, "and here are a few that will surprise him—if he has failed to take advantage of the possibilities in the Central and South American trade.

"Central America purchases a larger percentage of its foreign goods in the United States than does any other trade region on the globe. Department of Commerce records show that out of every four dollars worth of goods imported into these seven Central America countries, more than three dollars worth came from the United States.

"In 1928 for every $100 the United States businessmen spent in Central America for goods, there was $181 worth of United States merchandise shipped into Central America. United States sales in Central America in 1928 totaled $82,000,000 or nearly $13 for each inhabitant of that territory.

"These figures are growing rapidly. Inauguration of air mail service to Central and South American points from the United States has tended to speed up business. Today mail started from New York, Chicago, Denver and Los Angeles is delivered in the Central American city of destination within three or four days, depending on the city of origin and destination.

"Taking St. Louis as an illustration, business letters under air mail stamp leave there at 10:55 p. m., and are in Miami the next afternoon in time for transfer to the Central and South American air mail planes. The second day the letters are in Belize, British Honduras; Tela, Honduras and on the third day are in San Jose, Costa Rica; Managua, Nicaragua; Panama City and Cristobal, Canal Zone.

"The speed of the airplane has caused commerce to make it a major ally. Distance is no longer a factor in trade and the American businessman sees a notable feature in the Central American trade, namely its freedom from domestic competition. With only two or three minor exceptions, the agricultural and forest products which we draw from Central America are indigenous to the tropical zone and can not be produced successfully in the United States. On the other hand, Central America has no manufacturing industry of consequence and shows a deficiency in foods which are produced in the temperate zone. Trade exchanges, therefore, between the United States and the countries of Central America are largely of a non-competitive nature with respect to domestic production either here or there.

"Taking the seven sisters one by one we find:

"Panama ranks as Uncle Sam's best customer, its imports being well over $35,000,000 a year. Guatemala is the next best customer, with imports of approximately $15,000,000. Honduras averages purchases of more than $10,000,000 annually. Costa Rica will buy about $8,000,000. Sales to Salvador average $7,000,000 and to Nicaragua about $6,250,000 a year. British Honduras, although the smallest, the least populous and the least developed of the Central American countries, shows a foreign commerce per capita value which exceeds that of any Central American country. More than $4,500,000 worth of goods from the United States are imported annually.

"Fast and efficient air mail service from points in the United States to these Central American countries will speed up and increase trade and the financial return. The airplane has brought these important buying centers of Central America within hours of the American manufacturing plants thus assuring our hold on this business and giving us the facilities for further developing it.

"With all that we have heard about aviation in the past two years—aviation has, as a matter of fact, hardly started its development. Its effect upon our present recognized methods of living and conducting business will be far reaching and, in fact, will revolutionize the present markets of the world. In this age of efficient production and overproduction, aviation will be an important factor in solving the distribution of manufactured products."

OUR CHANGING STYLE OF ARCHITECTURE

by WILLIAM ORR LUDLOW, F. A. I. A.

IS modernistic architecture soon to displace the prevailing styles?

Do Colonial, Elizabethan, Italian Renaissance now belong to the past in this country, and a few years hence will they simply indicate buildings that are old fashioned? Shall we soon refer to them with the complacent superiority with which we mention Victorian Gothic, French Mansard, Cupola and Band Saw architecture?

Now, this is a very interesting question to most of us and an exceedingly important question to those who are about to build, or who are anxious about the sale value of their homes or other buildings.

In attempting an answer, let us admit the fact that the present generation cares little for tradition. We are beginning to do things now more because they are reasonable than because "we always have done them that way." To be sure, it leaves us in a position of uncertainty about what we shall be doing tomorrow, but, after all, adventure is the only way of progress.

We must admit too that in this "machine age," efficiency is making us more materialistic, and less responsive to such intangible things as sentiment, tradition, beauty. These new standards have even now affected nearly everything—business methods, habits, customs, ethics, religious views, music, art, all in greater or less degree, and that they will affect our architecture is quite sure.

Indeed one has but to look at our recent skyscrapers to see that the architecture of our big buildings has not only been affected; it has been revolutionized. We have proven that it is not necessary to borrow the old clothes of previous generations to cover an entirely new creation — the steel frame building. We have designed office buildings that are truthful, logical and beautiful; that have no trace of Colonial, Elizabethan or Italian.

Moreover, in our big buildings we are beginning to replace the small units like brick by materials in large units such as sheets of non-corrodible chrome steel, large wall boards for plaster, light hollow plaster blocks for brick or tile, re-inforced concrete in great slabs for terra cotta blocks. Already, therefore, the skyscraper of today bears no resemblance even in style to high buildings only a few years ago, and the skyscrapers of a few years hence will bear no resemblance to the skyscrapers of today.

It is quite certain that we are in the midst, perhaps only at the beginning, of an era of change, and what is happening to our large buildings is likely to happen to our smaller buildings. In fact we are quite sure to use in our smaller buildings many of the new materials borrowed from our large buildings.

Of course, in designing our houses, we have not the same problems to solve that the steel frame and great height impose, nor have the requirements of the house changed as greatly as those of the office building. But every day new materials and new forms of construction are being put on the market and new things are demanded, such as the incorporation of the garage with the house, omission of the separate dining room and larger windows for more sunshine.

It seems assured also that a few years from now the slow process of sending a lot of lumber to the site to be cut and fitted laboriously by a gang of carpenters to make

the frame of a house, will be replaced by the less expensive shop production of light steel members, cut and fitted in the shops, sent to the site, a steel frame complete, and erected in a few days time by a few especially skilled erectors.

It seems quite sure that we shall use in our houses more large units like wall boards, to do away with the traditional three coats of plaster, that our floors will be in a single plastic slab instead of small boards, that our roof coverings will no longer be of little shingles put on by hand at considerable expense, but of sheet metal of durability and pleasant design or of large thin composition or terra cotta slabs.

We may say then that there are these major factors that we must reckon with in any attempt to answer our question as to the passing of present architectural styles —the disregard of tradition, the efficiency of a machine age, the introduction of new materials and new methods of building and new housing requirements. That these will change both our architecture and our construction are without the shadow of a doubt.

Having admitted all this, let us pause just a moment, however, to remember that there is, fortunately, an element that enters into the design of a home that the methods of the big building and a machine age will never destroy. The home is not primarily built to pay dividends, and the sentiment about "home" is not dead yet by any means. Witness the thousands of individual homes being erected all over the country even in these hard times.

The "family" still means something and as long as it does, the design of our homes is not going to be levelled to the utilitarian box that some would have us believe. In making the home, efficiency and iconoclasm will never wipe out that kind of sentiment that opposed to materialism makes life worth while.

We are surely going to change the character of our homes, we shall probably abandon largely the "styles," but we are not about to rush headlong into a sterile modernism, nor shall we change our ideas over night, of what is beautiful and suitable for the expression of "home."

MORE ANENT BETTER CITY PLANNING

ALEXANDER S. BUTLER, Associate of Howard Gilkey, Landscape Architect of San Francisco and Oakland, writes anent the movement of the A. I. A., to encourage better city planning:

"A regional or county planning commission to correlate the development of the several communities, is recommended as well as a town and city planning commission with broad powers to zone, regulate and specify types and forms of development.

"These commissions might well engage experts to act as Directors, or Supervisors, these experts to be employed after the manner of City Managers. This would remove the necessity of group action on details and should tend toward removing politics from an issue hardly compatible with it.

"They should be backed with laws which would have to be broadened over those of the present to extend the police powers to cover offenses against the eye. This will allow them to condemn eyesores thereby recapturing the beauty lost by the unregulated development of the past."

Referring to the individuality and charm of any particular place, Mr. Butler decries it to be generally man-made. "Natural landscapes or regions of beauty have charm due to the presence of native plant material and geographical peculiarities, but most people take these things for granted," he says.

"What makes the greatest impression is the development and beautification of a community along artistic lines in architecture and city planning. By architecture is meant buildings and gardens, for one is the complement of the other.

"Two places of unusual charm in California are Santa Barbara and the Monterey Peninsula. Both have followed a style which seems climatically and historically adapted to the location, although on the Peninsula there has been less regulation."

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TEST OF ARC WELDED OFFICE BUILDING FOR SOULE STEEL COMPANY, SAN FRANCISCO

Five thousand pounds suspended from each panel point in top chord of truss (150 per cent of standard requirements)

ELEVATION AND SECTION, ARC WELDED OFFICE BUILDING FOR SOULE STEEL COMPANY, SAN FRANCISCO

FIRST ELECTRIC ARC-WELDED BUILDING IN SAN FRANCISCO

by HENRY D. DEWELL, C. E.

THE advanced technic of electrically arc-welding the connections of steel buildings has been successfully introduced to San Francisco by the welded building department of the Soule Steel Company in the erection of a new structure now nearing completion at 1700 Army Street, to provide additional quarters for the San Francisco factory of the Soule Company.

This structure—designed for a live load of 30 lbs. per square foot of horizontal projection, a dead load of 8 lbs. per square foot, and a horizontal wind load of 10 lbs. per square foot of vertical projection—is the first building in San Francisco in which electric-arc welding has been employed throughout; as the present San Francisco building ordinance does not recognize arc-welded connections.

In view of widespread interest in recent developments of the electric-arc welding method, the advisory committee of the Bureau of Building Inspection—Frederick H. Meyer, architect; Walter L. Huber, consulting engineer, and A. H. Wilhelm, general contractor—decided that arc welding would be allowed for this building, provided the Soule Company would make a special test of one of the trusses after it had been erected.

The Building Department, acting on this recommendation, prescribed that loading equivalent to 150% of the loading required by the building ordinance should be applied to the erected truss. Moreover, that some knowledge might be had of the ability of the connections to withstand impact stresses due to lateral forces, the department requested that the truss, while bearing the vertical test loads specified (150% of standard requirements), should be supjected to a lateral load applied suddenly at the column tops.

At the time of the test of the roof trusses, the lateral bracing was completed on one side of the truss and the roof purlins were all in place on that side. The truss was only partially braced laterally on the other side. The corrugated steel covering had not yet

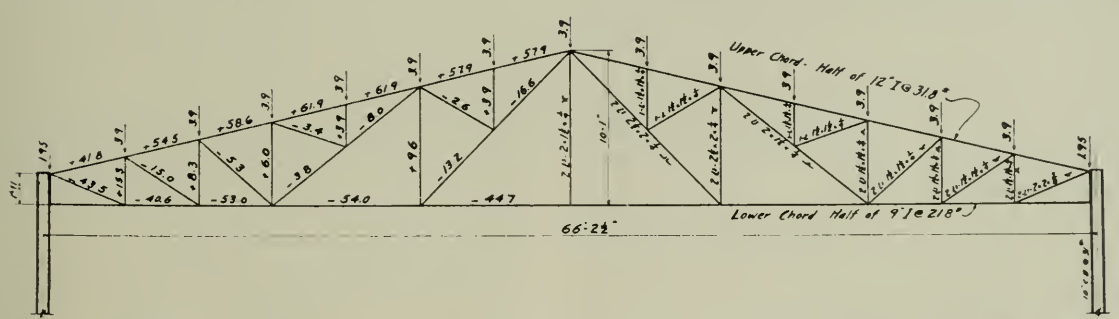


DIAGRAM SHOWING STRESSES IN ROOF TRUSS MEMBERS, ARC WELDED OFFICE BUILDING FOR SOULE STEEL COMPANY, SAN FRANCISCO

been erected, and in lieu of this the roof purlins in one bay were diagonally braced. A test load of 5000 pounds of steel bars was hung from each point. While these loads were on the truss, a load of 2000 pounds was allowed to drop suddenly 8″ and rigging was so arranged that this drop produced a sudden horizontal pull of slightly over 2000 pounds on the column at its connection with the lower chord.

The deflection of the truss under these quite severe test loads (computed, 1⅛″) was 1 1 16″ at the center panel and the effect of the suddenly applied load was almost unnoticeable. After one hour the loads were removed, and the trusses returned to their original position. As a result of the test, which was arranged and supervised by the writer, the Building Department gave approval to the arc-welded construction.

The Soule Steel Company had invited a considerable number of engineers and builders to witness the test and the large assemblage indicated the general interest in the possibilities of electric-arc welding.

After the test the spectators were taken through the factory and warehouse of the company to watch actual arc-welding operations on trusses being fabricated. Here a particularly interesting demonstration of the strength of electric-arc welding was given in the presence of the visitors. Operators arc-welded two steel angles about three feet long to a short third member to produce a joint representing a panel point of a Warren truss. This joint was then severely pounded by a heavy sledge until the members had been bent and twisted in several directions and finally ruptured. The welded joints withstood this punishment without failure. The visitors were also shown a massive plate shear machine, used in the merchant bar department of the company, that is built of heavy arc-welded members and machinery.

The building is a one-story factory, 200′ by 400′ in plan, with steel frame and roof trusses, wood purlins and girts, and sheathing of corrugated metal. All connections are arc-welded instead of riveted.

The roof is braced by a line of light columns along the column center lines, by vertical bracing trusses at the tops of the steel struts at the centers of the upper chords of the trusses, and by a system of lateral bracing at the level of the lower chords. The truss tested has a span of 66′ 2½″ and a spacing of 21′ 9″ c-c. A diagrammatic elevation of this truss is shown with the stresses due to a live load of 30 pounds per square foot on the roof in addition to the dead load; this live load being specified by the ordinance for all roofs having a slope of less than 20°.

The top and bottom chords are composed of T-sections made of a 12″ 31.8 lb. standard I beam and a 9″ 21 lb. standard I beam respectively. All web members are of double angle sections.

Before making the test required by the Building Department, a number of test joints were made up and tested to destruction in the laboratory of the Robert W. Hunt Company, in order to determine, first, the relative efficiency of single angle members and double angle members and, secondly, whether welding the ends of the angles to the gusset plates, in addition to the side welds, increased the efficiency. The single-angle member welded to a ⅜″ web plate has obviously a considerable eccentricity.

The unit stresses used in designing the welded connections were as follows:

Tension	12,000 lbs. per sq. in. of fillet weld
Compression	13,500 lbs. per sq. in. of fillet weld
Shear	9,000 lbs. per sq. in. of fillet weld

The specimens tested by the Hunt Company were necessarily influenced by the size of the grips in the testing machines. In testing these joints no particular attention was given to see that the angles were exactly vertical. The operator assumed that the machine itself gave the correct alignment. All the short angles tested were cut from one length of angle, so that the quality of steel may be assumed to have been uniform in all the joints.

Although this test brings a new development to San Francisco, the design and fabrication of arc-welded structures on the Pacific Coast, under other codes, has been carried on for the past two years.

TUNNELLING FOR HIGHWAY UNDER TOWN

by RICHARD H. WILSON

ONE'S first association with the word "tunnel" is a hole through a hill through which a railroad train may pass. However, with the present-day standards of highway improvement, the construction of tunnels has become a necessity to accommodate modern road traffic problems.

The latest highway development of this character is now under construction at Newcastle, in Placer County, California, where a tunnel, 531 feet long, is being driven under a portion of the town and incidentally under the main east-west line of the Southern Pacific Railroad.

Newcastle is located between Roseville and Auburn. It is one of the original small towns established in California's early days when high speed automotive traffic was not even a dream. Situated on a high knoll as it is, its tortuous narrow streets lend themselves to most anything else than the condition expedient for boulevard construction, and the necessary widening and straightening would have practically wiped out the small city.

As the Southern Pacific Railroad must be crossed at this point, and is of such height as to allow the construction of an underpass, all other tentative locations, after careful weighing of such factors as cost, alignment, grade, and public convenience and safety, were abandoned in favor of the more direct route through the hill under the town and the railroad. A few of the salient features of a comparison between the present traveled way and the new location may be readily visualized by scanning the tabulation given here.

The comparison made is of the present state highway at Newcastle and the highway under construction, with table showing the difference in favor of the new route:

	Highway under construction	Present highway	Difference favoring new route
Length	6182 ft.	7600 ft.	1418 ft.
Total rise	145 ft.	219 ft.	74 ft.
Adverse grade	None	74 ft.	74 ft.
Minimum radius curve	1500 ft.	50 ft.	.....
Maximum grade	5.12%	*8.00%	
Minimum width roadway	46 ft.—30' in tunnel	21 ft.	.....
Total central angles in curvatures	71°	670°	599°

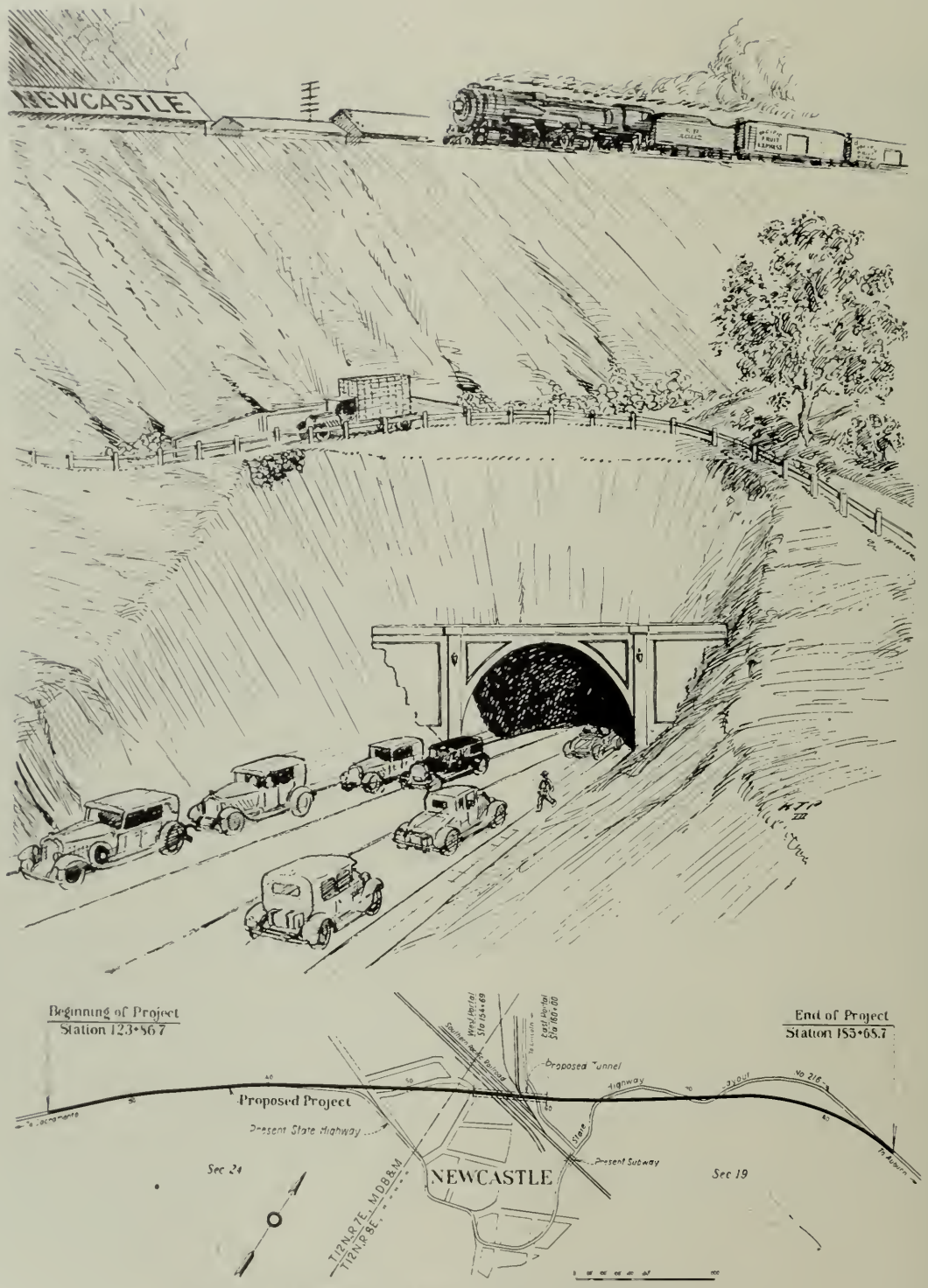
*2200 feet of present grade is 7.80% or greater.

In addition to the problems stated, the new location involved many local problems which necessitated a great deal of care and planning. The present water and sewer system of the town must be entirely changed and several houses moved; two county roads and the main ditch of the Pacific Gas and Electric Company had to be relocated so as to pass on the railroad sides of the tunnel portals.

Preliminary borings were taken and the elevation of the grade of the tunnel established so that its entire length is in solid granite. This established the elevation of the grade of the tunnel under the Southern Pacific tracks a depth of approximately 86 feet below the base of rail.

The roadway of the new section is normally 46 feet in width, narrowing to a paved 30 feet through the tunnel and heavy approach cuts with a three-foot sidewalk on either side. The center line clearance of the tunnel is 20 feet 9 inches.

Three types of lining will be used, the sections at the two ends and the section immediately under the railroad tracks being concrete and the balance redwood timber.



SKETCH AND MAP OF NEWCASTLE TUNNEL PROJECT

An electric lighting system is also to be installed, which should eliminate all hazards from that particular angle.

The actual cost of tunnel itself, including boring, lining concrete portals, lighting and contingencies, is $121,500.

JOHNNY HELPS HIS BOSS DEFINE THE MODERNISTIC MOVEMENT

(From the A. I. A. Octagon)

TO many architects, in especial the conservative and cultured, Modernistic Architecture is a painful and mordant ebullition.

"This is perfectly dreadful," is their exasperated comment on seeing illustrations of certain current work in architectural journals. "Cannot something be done about it? Have all these fine fellows gone crazy?"

This remark represents the conservative attitude of many enlightened gentlefolk toward the Modernistic Movement. They are apt to class all building which is not traditional, conservative and closely following precedent, as "Modern," whereas there are many types of the so-called "Modern" architecture, some fesh and inspiring like a breath of mountain air from the Canadian Rockies, heavy with the scent of fir balsam, while others are redolent, alas! of the fumes of bootleg gin, stale tobacco, and devious haunts.

When, one bright morning, a letter came from the Editor of *The Octagon* suggesting an article on the Modernistic Movement, we became all hot and bothered. For a moment the ozone seemed gone from the crisp autumn air. A cloud stole athwart the face of the sun and a chill wind from the gray north whispered low and menacingly with muted breath and around the corner of the penthouse on the roof just above our head.

"Johnny!" we cried appealingly (Johnny's our associate and friend of long standing; we've weathered many a storm together, man and boy, through thick and thin, nigh on forty years, and we value his counsel highly), "what do we know about the Modernistic Movement and the so-called Modern Architecture?"

"Not a damn thing!" said Johnny.

"Then how can we write about it?" we replied triumphantly, thinking that would let us out.

"Write about it?" said Johnny scornfully. "Write about it! You don't have to *know* your subject in order to write about it. In fact I think it's often a handicap. Look at Kipling; he wrote a book about fishermen on the Grand Banks without ever having been there. Everybody thought it was great—and it was great—except to the few fishermen who read it. They *knew*. How many people ever read "Moby Dick" during Melville's lifetime? A few hundred maybe, compared to the hundred thousands who read "Captains Courageous."

Johnny paused to roll a cigarette. Outside the faint hum of the city, punctuated now and again with the staccato explosions of the Brobdingnagian warehouse van as it slowly backed its way through the traffic into Bromfield Court with its daily cargo, drifted in between the parting bead and the pulley style.* Like many artists who think deeply about the problems of art and life, Johnny likes to pause and collect his ideas while twisting bits of tobacco into little brown papers.

"Where were we ?" said Johnny vaguely.

"You don't have to know your subject in order to write about it. Sometimes it's a handicap—" we replied insinuatingly, hoping to gather some ideas.

"Precisely," said Johnny emphatically. He lighted his cigarette and strolled out into the draughting room where he soon became dreamyeyed over a sketch in pastel

*While not essential to a discussion on "The Modernistic Movement," this incident of the warehouse van illustrates our traffic problems and shows how even the commonplace events of the day leave their imprint on the character of our art.

he was making on tracing cloth. Johnny lets his tracing cloth soak in a pan of water over night, and in the morning while it is still damp, he stretches it over a sheet of celotex that has previously been shellacked on both sides. This allows the tracing cloth to be fastened on with strips of electrician's tape, prevents the celotex from buckling, and at the same time gives a neat passe-partout effect. The dampened surface of the tracing cloth takes on just enough of the hairy texture of the celotex to give a fine "tooth" for the pastel, and produces a finished drawing that is the despair of those daughtsmen who are unacquainted with the process. We omitted to mention that the outline of the subject to be rendered may be traced on the tracing cloth before it is put to soak, care being taken not to disturb the lines which will, in spite of all you can do, smudge slightly in the overnight bath pan. This does no harm however, in fact it lends "atmosphere" to the sketch. While the sheet is still wet it may be pulled either to make the subject taller and thinner or broader and stouter, as if seen in a convex mirror; it may even be pulled diagonally. Johnny has produced some fine Matisse and Picasso effects in this way, and finds it very helpful in designing buildings on irregularly shaped lots.

We looked over Johnny's shoulder while he worked. Johnny never uses a porte crayon, he breaks the pastel sticks up into pieces about an inch long and lays on "washes" by using the crayon flat. When he achieves a sharp edge he puts in the lines and detail with deft touches.

Presently he began to talk again.

"The word 'modern,' the Fowler boys tell us, is derived from the low Latin 'modernus' or 'modo' (just now). The erudite profundity of those two young men is amazing; what H. W. doesn't know about etiology, bibliolatry and the philosophy of causation, F. G. does, so between the two, there is little if anything, about the King's English that escapes them."

"How about jazz," we remarked, "you won't find that word in the Oxford dictionary."

"Exactly, for jazz may not be defined and classified into its derivatives as are harmony and melody and rhythm and gamut and fugue and syncopation and stave and diatesseron and tonic and diatonic and supertonic and homophony and euphony and all the other phoneys and tonics, for jazz is all these, and more. It is like the shadow of a hovering kiss on the damask cheek of a crooning babe, or the first blush of a damsel's dream, or the pearl-tinted dewdrop as it quivers on the paper-white petal of the asphodel, or the moaning of the samiel in the mimosa canebreaks, or the wild sweep of the harmattan as it roars down the Old Calabar and beetling crags of Ashanti." Johnny paused to light another cigarette.

"The Modernistic movement in Architecture is like a diapason of jazz bursting from the chrysalis of the older symmetries which the Greeks call taxis. It has infinite possibilities, amorphous, epicene, protean, aberrant, wanton, egregious, not to say bizarre, exotic and Cyclopean."

"You must have been reading Roget," we interjected.

"I have," replied Johnny, "and it's relieved my mind a whole lot since I saw a certain number of *The Architectural Forum*. Some of the categories, especially those on Abstract Relations and Precursory Conditions, are soothing to the soul."

"How about leaving off the cornice? Does that constitute Modern Architecture?"

"Yes and no," said Johnny, blowing a fat smoke ring which bore a striking resemblance to the abacus on the Treasure House of Atreus, son of Pelops and Hippodamia.

"I must learn to blow modernistic smoke rings, or be completely out-moded. They say that's how Urban gets some of his swell ideas," Johnny muttered. "The omission of cornices now," he went on, "is not exactly a new idea. The Egyptians didn't seem to find them essential. Look at the Pyramids, nothing to show where the building ends and the sky begins. Even the restorations of Perrot and Chipiez show little in the way of cornices. The Chaldees and the

Druids and in fact all early peoples dedepended on wall decoration rather than mouldings for architectural effect. Look at George Howe's lovely Tyler house in Elkins Park, Philadelphia. There's nothing new in the omission of the cornice. The Dorians left off the bases on their columns. The omission of the capital which is the cornice of a pillar, is less frequent, and it is in this feature that the "moderns" who show nothing from the necking up, have gone a step beyond their predecessors, or maybe it's a step backward, who can tell? After all, we are but little children who, tiring of the toys the old folks have handed down to us—toys that have been resurrected from up garret encrusted with the dust of bygone years—have cast them aside, and in the first flush of our pulsating youth, attempted to build new ones in accord with our dawning complexes. The first attempts naturally enough are crude, but being our very own, we are inordinately proud of their originality (sic). This is to be expected and follows the law of evolution. We should be tolerant of the tender cotyledons and protect them from the stirquilinous larvae that threaten the existence of the New Movement, but at the same time we should not neglect the fine burgeoning and flowering that still shed romance and beauty on the enchanted gardens of the past.

"I shall never forget the first view of Giotto's glorious Campanile. The photographs, with which one has been familiar since kindergarten days, show a cold, hard, black-and-white striped square tower whose outline seems anything but graceful, whereas in reality, the soft haze of a frosty Florentine morning, with the mists of the Arno mingling with the heavenly blue of the sky, the infinite gradation of pink and green, violet and rose marbles, opalescent whites and warm pearl grays, combined with the exquisite tracery and imbricated mosaics, the whole relieved by a pushcart or two piled high with brilliant tangerines and a few picturesque urchins at the base, form a picture, the memory of which even the most marvelous creations of the 'Moderns' can not dispel."

The draughting room was singularly quiet. At first we thought everybody was listening intently to Johnny's words, letting them soak in, as it were, until we glanced around and saw the place was deserted. They'd all gone to lunch.

"Well," said Johnny, musingly, "I saw a design for a bungalow in *The Architectural Record*. It was in Albuquerque or Santa Clara, or maybe it was on the roof of a sixty-story office building. For all the world it looked exactly like my old bureau with the drawers pulled out, some more than others. It bore more resemblance to a problem in Descriptive Geometry, or a pile of empty crates in the yard behind Ed Weatherbee's corner grocery, than to a love nest. That was a most striking example of the Modernistic Movement.

"Modern Architecture may be evaluated by the application of the same standards by which the Old was judged. Intuition or a cultivated taste are essential for the full appreciation of the harmonies of Karnac, the Acropolis and Rheims. It may be that the New simply astonishes by its seeming crudeness without evoking aesthetic emotion, whereas thoughtful analysis and the application of the laws of taxis and symmetry will dissolve preconceived intolerances and inherent prejudices. Both the Critic and the Artist must discard the notion that only so-called existing values are absolute. 'The dead hand of the past lies heavy on us all.' The possibilities of Art are infinite and by the exercise of a scholarly degree of pragmatism we may be sowing the seeds of a richer and more complex culture of the future. It seems a far cry from Corregio to Covarrubias; let's go to lunch!"

The ARCHITECT'S VIEWPOINT

- *Too Much Commercialism a Handicap to Good Architecture*
- *Modernism in the San Francisco Bay Region*
- *Building Construction in Retrospect and Prospect*

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WHAT is there to say editorially? Should we praise ourselves and our work, or should we praise ourselves and condone our work, or should we praise ourselves and condemn our work, or should the populace be damned? The latter offers the safest course.

The editor has intrusted me with these pages. I may say what I wish; no rules or limitations. Through skepticism we learn our faults; with optimism we may profit.

I ponder as I write. I think of buildings of today, of yesterday, and of a people. Some I know, some I have read about. Are the buildings better today? I must ask first are the people better?

Do fine things in Architecture move a people? Does Architecture pay, as the saying goes? Do fine people generate a fine Architecture or do fine Architects create a fine Architecture? Is there today a style at last, as that of Greece, to represent a civilization; and if there is, has that civilization something of value to interpret in stone or concrete?

Before I use up my space with questions there must be some answers—some statement to make this worthy of an editorial, or perhaps unworthy. The architect, through the centuries, has retained a spirit, a reverence and an ideal. Many, as in other arts, have the training and the ability to create fine things. But most of our efforts we can merely condone. A few of our efforts we should condemn. All of our efforts should be praised in view of the system under which we labor.

All today are bent toward one result, that of dividends and return of invested capital. Could any art ever thrive where a dollar given in investment might be retrieved and leave anything but a shell; or must the dollar partly stay to represent a living sacrifice, a spiritual force behind the stone. I think that before we can have an Architecture, we must have a people who want to live and contribute to the future rather than to mortgage the future for others to pay.

Why employ architects to build great buildings? Why not rather have them fail as has the money structure? Did any of the 80,000 who saw Stanford play California in November see or even become conscious of the stadium they were occupying as an architectural achievement? If they did, they would not measure greatness by victory or dollars, but would erect a bust or a plaque or a name on a concrete seat to Beckett of California.

Architects have nothing to express. As Lewis Mumford has said, "His business is to put on a front". We offered with hope a Gothic revival to an industrial world; we devised an antique revival in despair as quality and craftsmanship was denied us; and now we herald Modernism, satirically,—a real 20th Century expression that has boomeranged already in Europe to mock a dollar philosophy. What good comes of "putting emotional relationships into materials", as Le Corbusier has said, when a people at large are incapable of artistic, emotional response.

Mr. R. M. Schindler of Los Angeles, Architect and Modernist, when lecturing recently in San Francisco, was asked by a lady to name some modern structures that we might see in San Francisco. His answer, after sufficient time in supposed thought had elapsed to soften any possible feeling of hasty judgment was: "I know of no examples of modern architecture in or about San Francisco." This, I suppose, included Berkeley, though he added, "There is fine modern decoration to be sure." This comment is not a criticism of architects; in fact, I feel at times that to attempt to be modern in architecture justifies a criticism. Surely in public work we do not have a clientele that is "modern minded". We should most certainly express our public in public work, but who can say what style will interpret present day confusion?

* * *

OF building construction in California for 1930 there is little to look back at with pride of accomplishment unless it be a small but well done amount of work of some of the architects on the Coast. This has been confined mostly to public work, large commercial structures and residential work. The church, generally speaking, falls sadly behind. The medium-priced commercial work is nothing more than hardened rock and cement. Tenements, except in a few instances, have gone lower and lower with the market. Only a good fire or earthquake can save the cities from their plague. Warehouses and factories did not ask for praise in 1930.

Of the financial institutions, the banks and bond houses have come out on top. They have justified the return of a temporarily lost confidence of the building fraternity and investors. Of some of our major loaning institutions we withhold criticism in view of the Hollywood disaster. This was not the weakness of an individual. It was the weakness of a system. That leading Building and Loan Associations recognize the unusual and unlimited trust the people of California have placed in them, will evidence itself soon we are sure in progressive changes of operating policy.

Speculation in building, as in stock, has been rampant. Nineteen twenty-nine singed its wings. 1930 pulled the tail feathers. The buildings of this era are the bastards of the industry. Many architects, once proud parents, have disowned their offspring and taken their losses along with builders, contractors and loan companies.

I see for 1931 a year of great accomplishments. Architects' Associations locally and over the country will be closely united and will offer constructive and progressive leadership to the industry. Contracting, manufacturing and distributing groups will cooperate with architects; together new ethical and business standards will be promulgated. Publishers of professional and trade magazines will, with the support of their readers and advertisers, accept the opportunity to become the medium of exchange for thoughts and actions. There will be new legislation and new agreements. Wise individuals and companies within the building industry will not hold out alone, but will play their part in the new scheme of cooperation.

There is every hope that as a result of this present depression, with its attending chaotic economic demoralization, all society will be forced to stop and attempt to regain a proper sense of values. The leadership necessary to bring us out of this economic and moral slump cannot come from individuals, be they artists, scientists, philosophers or statesmen. It will come from groups banded together because of their mutual predicament and finally from a super-group which will emerge to evolve a new economic structure. There must and will come, in parallel, a new social order; and when it does industrialism will be the aid to finer things. Success will be measured in accomplishment, not in dollars earned. Beauty and order will be a virtue rather than a sin, and the dollar will take its place as it was intended, a servant of creative force rather than the master.

WILLIAM I. GARREN, A.I.A.

PROPER LAY-OUTS FOR GAS FUEL APPLIANCES

by ALBERT J. EVERS, A. I. A.

TO the end that architects, contractors and others may be assisted in the correct installation and application of gas fuel, in the designing for gas usage, and in the selection of appliances which are attractive, durable, safe and efficient, the Pacific Coast Gas Association is preparing for issue a reference work, in which all the data contained has been selected especially for the guidance of men concerned with this phase of the building industry.

This booklet will undoubtedly prove of tremendous value and interest to the building industry, inasmuch as the members of the Association maintain a staff of experts in the field of gas utilization. The Association itself is an organization of gas companies, gas appliance manufacturers and dealers handling gas appliances. Its purpose is to conduct research in the technical problems of gas manufacture, distribution and utilization in order that this fuel may realize the highest possible degree of effectiveness and economy in its application to home and industry.

In view of the widespread and increasing utilization of gas in building today, thorough knowledge of its correct usage becomes indispensable to the architect and building engineer. The matter of adequate house piping, for instance, is an item the importance of which cannot be over-estimated, for without the proper piping, the use of gas is restricted and the selection of the best appliances for a particular installation becomes impossible. Architects and engineers should insist on complete piping for gas in all new buildings for while there are many now who are not alive to the desirability of using gas for all fuel purposes, future occupants of the building will, undoubtedly, wish to install gas appliances, and the expense of subsequent piping will be greatly increased, if not made prohibitive. The lack of adequate gas piping in a building is very often likely to interfere with its lease or sale in the future.

City ordinances usually govern the installation of gas appliances and compel the observance of various safety requirements, but there are many other factors concerning which gas engineers, in their advisory capacity, are well prepared to make useful suggestions.

In the design of house piping, for one thing, we find that there are several factors which must determine the size of gas pipe to be installed, such as the maximum gas consumption to be provided for, the length of pipe and number of fittings, the allowable loss in pressure from service pipe or meter to appliance, the specific gravity of the gas, and the diversity factor (the ratio of maximum possible demand). Calculations must be made with the proper consideration of these factors, and in the Association's booklet, detailed tables are included which enable the designer to accurately judge the requirements of a particular building.

Gas vents, flues and vent connections must adequately care for the heating and cooking load, and every new building should be equipped with adequate chimneys and flues for gas appliances. The purpose of vents for gas appliances is not to create a draft to support combustion, but to carry products of combustion to the outside air. These products are normally carbon dioxide and water vapor, but may contain traces of sulphur or other compounds having an objectionable odor.

The undesirable effect that will result from the improper location and connection of flues and vents may well be realized, and the recommendation of technical experts will insure correct performance.

The selection of gas appliances in which to utilize this fuel cannot be done with too much care. No fuel can be used to its greatest advantage and economy unless the means of using it are developed correspondingly. As a general rule, there is a wide range of appliances available for each purpose, but each type has more or less well defined limits of proper use. Inasmuch as the practice of installing gas appliances at the time of construction and under the original financing

is coming into wide use, the architect, builder and owner are interested in the subject of selection.

The general requirements of safety, construction and efficiency are insured if appliances bear the American Gas Association insignia known as the Laboratory Approval Seal. This symbol appears on all appliances which have met the approval of the American Gas Association, prepared by experts to insure, first of all, satisfactory and safe performance of the appliance when in actual use. The committees which draw up the requirements represent the U. S. Bureau of Standards, the U. S. Bureau of Mines, the U. S. Public Health Service, the National Association of Heating and Piping Contractors, and other interested elements. Any appliance that cannot meet these requirements is not fit to be used and all practical means should be employed to prevent its sale and use.

Advice for the most advantageous use of gas water heating treats of the tank water heater, the automatic instantaneous water heater, and the automatic storage water heater. We are told that only where there is little hot water used, at widely separated intervals, is the tank water heater advisable. For residence use, or where hot water is required in quantities and frequently, either the automatic instantaneous or the automatic storage water heater should be specified.

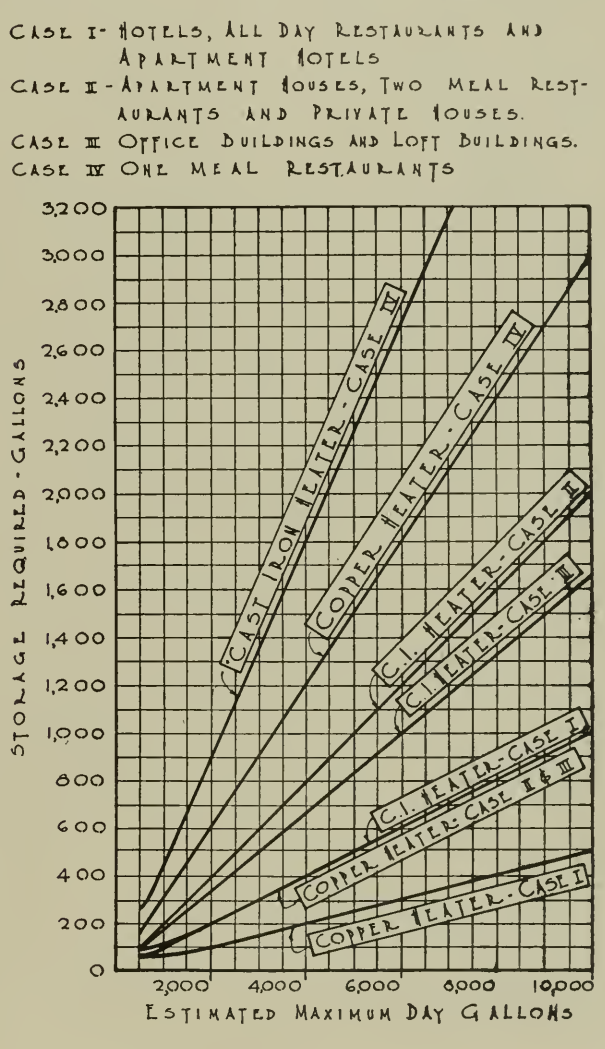
Compilations of data and curves enable the designer to determine the size of heater by the volume of water demand, the number of faucets that can be supplied from each type of heater, and the advisable location of water heaters.

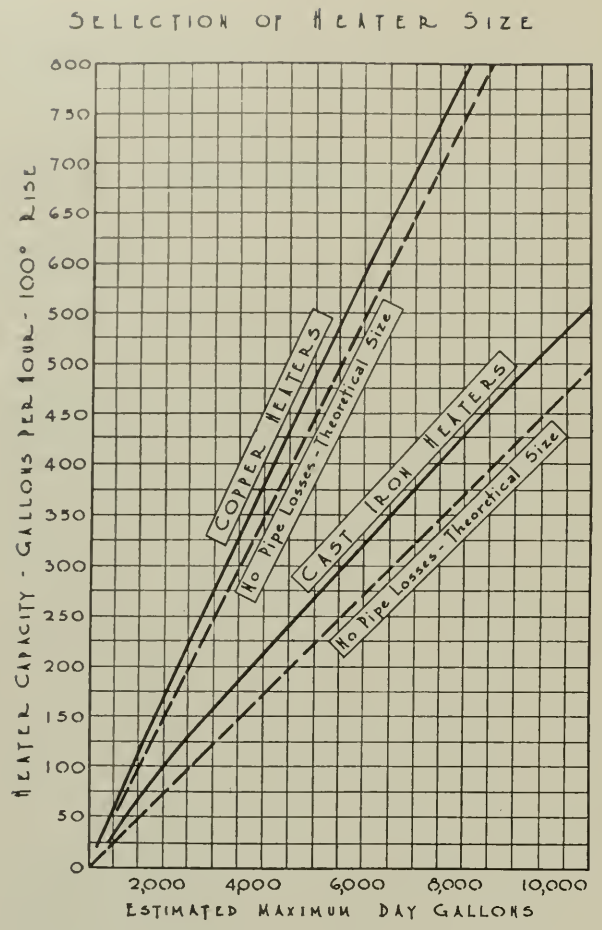
The design and installation of a large heating system inevitably necessitates the advice and services of a qualified heating engineer, but useful data is furnished here for preliminary estimates. The heat requirements of a building are listed, as well as the temperatures which should be maintained in different types and classes of buildings. A detailed table is devoted to determining the coefficients of heat transmission through walls, floors and masonry of various materials by the use of two factors: The B. t. u. per hour per square foot per degree F. difference in temperature between the air on the two sides with wind at 15 miles per hour, and the square feet of wall which will transmit 1000 B. t. u. per hour at the temperature difference given.

In the selection of heating systems, there are two distinct classifications. Central heating plants include warm air furnaces and steam, hot water and vapor boilers; and individual fired appliances include warm air pipeless and floor furnaces individually fired, radiators, warm or steam, and radiant heaters, wall heaters, etc. While no exact rules are prescribed as to the field best covered by each of these types, it will be found that each installation will have problems pointing more or less definitely to some particular type. The insurance of efficiency, thorough heating and economy will be materially increased if the recommendations of heating experts are heeded.

Gas refrigeration, gas-fired domestic laundry equipment and gas incineration are explained for the guidance of the builder, and how they may best be used. Gas refrigerators differ radically from other types in that they operate without machinery of any kind, and consequently, there is no possibility of mechanical break-down. Once lighted, the freezing process goes on, creating even, dry cold at all times below 50 degrees F.

Laundry equipment is classified as to types and items,




SELECTION OF HEATER SIZE
HEATER CAPACITY - GALLONS PER HOUR - 100° RISE
ESTIMATED MAXIMUM DAY GALLONS
COPPER HEATERS
No Pipe Losses - Theoretical Size
CAST IRON HEATERS
No Pipe Losses - Theoretical Size

and gas consumption is calculated according to the appliance, number in the family and washings per month.

While the compilation of material has been from technical sources, it is hoped to present it in such form that it will be more generally useful than the usual handbook and text books on heating, as it is written more particularly for those specializing in this branch.

WILL LIVE IN SAN FRANCISCO

Lothar C. Maurer, architect, formerly of New York, whose lovely camera sketches of Spain have been appearing in THE ARCHITECT AND ENGINEER the past year, is in San Francisco where he expects to remain. He will open an office for the practice of architecture. Mr. Maurer is just back from a second visit to Spain with more photographs of the interesting architecture of that country.

SOME BIG 1931 PROJECTS

Prosperity is "just around the corner", if the following building projects scheduled for 1931 have any significance:

Golden Gate Bridge, from San Francisco to Marin County, California	$35,000,000
United States Army Air Base, Alameda	6,000,000
United States Army Bombing Base, Marin County	2,000,000
United States Navy Dirigible Base, Sunnyvale, Santa Clara County	5,000,000
Legion Memorial Building, Civic Center, San Francisco	2,000,000
Municipal Opera House, Civic Center, San Francisco	1,500,000
Jewish Community Center, San Francisco	650,000
Federal Office building, San Francisco	2,800,000
National Broadcasting Tower and office building, San Francisco	1,000,000
New school buildings, San Francisco and Oakland	2,000,000
Alameda-Contra Costa counties Broadway tunnel	1,000,000
Richmond-San Rafael Highway Bridge	10,000,000
Paramount Theater, Oakland	1,000,000
Warner Brothers Theater, Oakland	1,000,000
Addition to U. S. Veterans' Hospital, Livermore	1,000,000
Postoffice Building, Oakland	1,500,000
Group of health center buildings, San Francisco	800,000
Olympic Club Building, San Francisco	3,000,00
Bohemian Club Building, San Francisco	800,000
Mills Building Annex, San Francisco	1,000,000
New wing to Lane Hospital, San Francisco	750,000

WASHINGTON STATE SOCIETY

The annual meeting of the Washington State Society of Architects was held December 11th at the Gowman Hotel, Seattle. The following officers were elected:

President, John S. Hudson.
First vice-president, R. M. Thorne, Renton.
Second vice-president, Julius Zittel, Spokane.
Third vice-president, Stanley A. Smith, Pullman.
Fourth vice-president, W. W. Durham, Tacoma.
Secretary, O. F. Nelson, Seattle.
Treasurer, E. Glen Morgan.

WITH *the* ARCHITECTS

OAKLAND ARCHITECTS BUSY

Miller & Warnecke, Financial Center Building, Oakland, report some good prospects for the new year. Construction is expected to be under way shortly of a brick mortuary chapel for Grant D. Miller at Telegraph Avenue, near 29th Street, Oakland, to cost $45,000. The same firm is preparing preliminary drawings for an English type residence in Piedmont to cost $20,000, and a Spanish type residence in King City to cost $12,000.

ON THE STATE BOARD

WARREN C. PERRY, architect, and professor in the School of Architecture, University of California, has been appointed a member of the State Board of Architectural Examiners, Northern District, to succeed James S. Dean, city manager of Sacramento.

H. C. CHAMBERS of Los Angeles has been appointed on the Board, Southern District, to succeed Wm. J. Dodd, deceased. The appointments were made by Former Governor C. C. Young.

ALAMEDA APARTMENTS

Financing is in progress of a seven-story steel frame and concrete apartment building to be erected at Taylor and Webster Streets, Alameda, for J. S. Bercovich. The plans were made by Thomas J. Keenan of Oakland. Construction will probably be handled on a percentage basis by G. P. W. Jensen.

LOS ANGELES NEWSPAPER BUILDING

The Los Angeles *Times* has had plans prepared by Gordon B. Kaufmann for a thirteen-story Class A newspaper and office building to be built on the property of the *Times* at First and Spring Streets. The owners are planning to spend in excess of $3,000,000 on the project.

BRANCH BANK BUILDING

H. H. Winner, 580 Market Street, San Francisco, is the designer and manager of construction of a one-story branch bank building to be built at Alvarado and Franklin Streets, Monterey, for the Monterey County Trust & Savings Bank. The estimated cost is $125,000.

BURLINGAME APARTMENTS

Grimes & Schoening of San Mateo have completed drawings for a two-story and basement frame and stucco apartment building in Burlingame for E. Cobo. They have also completed plans for a $50,000 apartment building to be built on Ellsworth Avenue, San Mateo, for A. J. Feasey.

SAN FRANCISCO APARTMENTS

Julius Krafft & Sons, Phelan Building, San Francisco, have completed working drawings for a $50,000 three-story frame apartment house to be built on the north side of Oak Street, west of Octavia, San Francisco, for the Lennon Estate. There will be 24 two-room apartments.

OAKLAND POST OFFICE BUILDING

Construction of Oakland's new post office building at Jackson, Alice, 12th and 13th Streets, Oakland, is going forward immediately. Bids for the excavating and foundations have been taken and this work is expected to be under way before the end of the month.

BATH HOUSE AND POOL

An English type private bath house and pool is to be built on the estate of Mr. and Mrs. John Rosekrans at Woodside, San Mateo County. Plans for the improvements have been prepared by Messrs. Bakewell & Weihe of San Francisco.

NEWSPAPER BUILDINGS

A group of newspaper plants is being designed by John McCool, 381 Bush Street, San Francisco. One-story buildings are to be erected in South City, Redwood and Palo Alto at an approximate cost of $15,000 each.

GROUP OF DWELLINGS

A group of four Spanish type residences is being planned by E. Goeffrey Bangs, architect of Oakland. The houses will be built in Burlingame Gate, San Francisco, for Harry B. Allen.

APARTMENT HOTEL, OAKLAND

A six-story and basement steel frame and concrete hotel of 3 stores and 100 rooms will be erected on 40th Street and San Pablo Avenue, Oakland, early in the spring. The Dyer Construction Company has the contract for approximately $125,000. Clay N. Burrell prepared the plans. Mr. Burrell has also prepared plans for a factory building for the Hammer Bray Company at 26th Avenue and East 12th Street, Oakland, estimated to cost $160,000.

BERKELEY PAROCHIAL SCHOOL

Arnold S. Constable, 580 Market Street, San Francisco, has prepared sketches for a two-story frame and stucco parochial school for St. Mary's Magdalene Parish, Milvia and Berryman Streets, Berkeley. An application has been made to the City Planning Commission to rezone the district so the school may be built.

SAN FRANCISCO RESIDENCE

Plans have been completed by Bakewell & Weihe, 251 Kearny Street, San Francisco, for a $50,000 English type half-timber and brick veneer residence for Dr. A. Lincoln Brown. The location is on Broadway, between Baker and Lyon Streets, San Francisco.

BERKELEY CHRISTIAN CHURCH

Working drawings are being prepared in the office of W. H. Ratcliff, Chamber of Commerce Building, Berkeley, for a brick veneer church at Scenic and Le Conte Avenues, Berkeley, for the University Christian Church Society. The auditorium will seat 500.

PATIO TYPE BUILDING

A two-story patio type store and office building in Berkeley is being designed by Edwin L. Snyder, architect, 2101 Addison Street, Berkeley. Construction will be of white-washed brick with terra cotta tile roof. There will be 12 shops and as many offices.

SEATTLE APARTMENTS

Earl W. Morrison, Lumber Exchange Building, Seattle, is the architect for a $200,000 eight-story brick and concrete apartment building for the Terry Towers Apartments, Inc. There will be 88 two and three-room apartments.

SAN MATEO THEATER

A Class C moving picture theater is to be built in San Mateo for the United Artists, Incorporated. S. Charles Lee of Los Angeles is the architect.

SAN JOSE ARCHITECTS BUSY

New work in the office of Wolfe & Higgins, San Jose, includes sketches for a suburban schoolhouse, plans for a residence in Millbrae Highlands, a country store and residence on Delmas Avenue and a large residence on the McKee road for E. E. Porter.

COUNTY HOSPITAL

Russell G. DeLappe, 1710 Franklin Street, Oakland, has been commissioned to prepare plans for a two-story and basement reinforced concrete hospital at Modesto for the Supervisors of Stanislaus County. The estimated cost is $100,000.

13-STORY ADDITION

A thirteen-story addition to the nine-story class A office building at Second Avenue and Mission Street, Seattle, is being designed in the office of A. H. Albertson and Associates, Northern Life Tower, Seattle. Estimated cost is $1,000,000.

SANTA BARBARA SCHOOL

Plans are out for figures for a Class B junior high school building at Santa Barbara estimated to cost $425,000. Bids are to be in the latter part of the month, according to the architect, William H. Weeks, of San Francisco.

CONCRETE AMPHITHEATER

William Lee Wollett, of Los Angeles, has prepared plans for a $250,000 reinforced concrete amphitheater at Cahuenga and Highland Avenues, Los Angeles, for the Pilgrimage Play Association.

SAN LEANDRO RESIDENCE

Plans have been completed in the office of James Mitchell, architect, 369 Pine Street, San Francisco, for a large Normandie type residence for the Estate of Mrs. I. W. Hellman in San Leandro.

ACADEMY OF SCIENCES

Plans have been completed in the office of Lewis P. Hobart, Crocker Building, San Francisco, for an addition to the California Academy of Science Building in Golden Gate Park, San Francisco.

Y. W. C. A. BUILDING

Preliminary plans have been prepared in the office of Julia Morgan, San Francisco, for a Chinese Y. W. C. A. building to be built on the south side of Clay Street, east of Powell, San Francisco.

ARCHITECTS AND DRAFTSMEN IN NEED

Many architects and draftsmen, graduates of foremost schools of architecture, have been thrust into the ranks of the unemployed, according to information furnished by the American Institute of Architects. In the region of New York it is estimated that there are 3,000 architects and 120,000 architectural draftsmen. Investigation indicates that at least ten per cent of this number are in need. Among them are former university teachers, practicing architects, and men who have won prizes and medals for outstanding achievement in their profession. Nearly 500 have registered at the bureau set up by the Architects' Emergency Employment Committee in New York.

Many of the registrants evidence urgent need. Skilled men who have earned more than $5,000 a year are now lucky if they can earn the emergency stipend of $15 a week, it is said. One man "would drive a truck." Another "would gladly do anything however menial." More than three-quarters of the idle draftsmen have from one to three persons dependent upon them for support. Their ages range from 24 to 60, and their length of experience from 2 to 41 years.

Among them are men who have received degrees from New York University, the College of the City of New York, Columbia University, the Yale School of Fine Arts, the Beau Arts Institute, The Ecole des Beaux Arts, Cornell University, Massachusetts Institute of Technology, and the Universities of Pennsylvania, Wisconsin, Illinois and Michigan.

The majority have served long apprenticeships in offices of leading architects in New York, London, and the ateliers of Paris. They include men who have worked on buildings such as Washington Cathedral, where Admiral Dewey and President Wilson are buried, and the Stanford University buildings.

The Architects' Committee, in collaboration with the Emergency Work Bureau of the Emergency Employment Committee, has so far been able to give employment to only fourteen of the most needy draftsmen on the basis of $5 a day for a three-day week.

One of the first draftsmen to work at the emergency rate of $15 a week is a University of Pennsylvania graduate with a wife and two boys to support. In addition to his university training he has studied in Europe and has fine New York references. He has earned $100 a week, but as he has been out of work for a year, his resources are exhausted and his plight is desperate.

Another draftsman who has joined the long line which forms at four o'clock in the morning outside the headquarters of the Emergency Work Bureau in Wall Street is a man with a wife and three children to support. His earnings have been $80 a week. Despite his eleven years' experience and the beautiful drawings he has to show he has no hope of adequate earnings to meet expenses.

These two draftsmen are typical of the fourteen men with wives and two or three dependent children, who are considered fit candidates for relief in the lines of destitute men.

A 24-year-old man who recently completed the five-year course in mural decoration at the Yale School of Fine Arts, whose father is now out of work, whose brother and sister are too young to work, and who had earned $40 a week toward their support, is another instance of the caliber of the draftsmen seeking placement.

One of the applicants now in urgent financial need has been awarded the medal of the American Institute of Architects for distinguished work. One, with a dependent wife, has been out of work for the past four months. He taught formerly for four years in one of America's most prominent universities a course in "descriptive geometry, perspective, shades and shadows," and subsequently worked five years in one of the leading architect's offices in New York.

Another man now eager to find employment as an able architectural draftsman is a former member of the American Institute of Architects and of the Beaux Arts Society. He has had forty-one years' experience and has done brilliant work in New York, Chicago and South America. He is now about 60 years old, and has a wife dependent upon him for support.

Reasons for unemployment are various. Many are traceable to the slowing up and cessation of building projects, and the complete shutdown of architectural departments in banks, and other institutions.

ARCHITECTS MOVE

Jos. L. Stewart, architect, announces the removal of his offices from 400 Sansome Street to the Insurance Center Building, 208 Sansome Street, San Francisco.

H. B. Aarens has established offices at 1558 N. Vine Street, Hollywood, where he would be pleased to receive catalogs and literature from manufacturers and material dealers.

HEIGHT LIMIT REGULATIONS

Concluding a series of public hearings on the question of limiting the height of buildings in unincorporated territory of Los Angeles county, the Regional Planning Commission at a meeting December 17 adopted the following regulations which will be submitted to the board of supervisors in an ordinance to be drafted by the commission:

"No building shall be erected in the unincorporated territory of the county of Los Angeles which exceeds a height of 150 feet from the curb level or contains more than thirteen floors, or the cubical content of which exceeds 125 times the area of the site upon which the building is to be erected;

"Provided,

"(1) That if the owner shall dedicate for light and air purposes a setback on all sides of the site upon which the building is to be erected of not less than twenty feet, a building of greater height may be erected.

"(2) That any portion of such building erected to a height of greater than 160 feet shall be set-back on all sides of the site upon which a building is to be erected of not less than thirty-five feet.

"(3) That where a dedicated alley exists the twenty-foot setback may be measured from the center of the alley, and that no further setback above 160 feet on that side of the building facing such alley shall be required.

"(4) That no portion of any building site included in the calculations of the volume of a building erected under the provisions of this ordinance and upon which a dedication for light and air has been accepted in accordance with this ordinance may be included as a portion of any other building site for the purpose of determining the maximum cubical content thereof."

PERSONAL

William H. Weeks and staff have moved from the Hunter-Dulin Building to the Underwood Building, 525 Market Street, San Francisco. The offices are on the fifth floor facing Market Street.

Lester H. Hibbard announces his resignation from Stanton, Reed and Hibbard, to form with H. Scott Gerrity and H. A. Kerton—Hibbard, Gerrity and Kerton, Architects, 1106 Architects Building, Los Angeles. Forrest O. Stanton and Harold E. Reed will continue the practice of their profession as Stanton and Reed, 1107 Architects Building.

Governor James Rolph, Jr., has announced the selection of Col. Walter E. Garrison, Stockton rancher, surveyor and vineyardist, as Director of the Department of Public Works to succeed Bert B. Meek, resigned.

LECTURES FOR DRAFTSMEN

A new activity of the New York Society of Architects is the formation of an auxiliary organization intended to be of benefit to draftsmen and junior architects who are not as yet registered as architects. The immediate objective of this organization, which is intended to be partly educational and partly social, consists of the giving of a course of lectures to be delivered during the winter and spring. The subjects of the lectures are:

The Education of an Architect.

The Functions of an Architect and His Relations to the Client.

Modern Tendencies in Design.

Methods of Studying a Project, Beginning With the Sketches.

Taking of Estimates and General Practice of Letting Contracts.

Supervision of Work in Field.

Technique of Writing Specifications.

Office Administration, Organization and Cost of Producing Drawings.

Selection of Building Materials.

Legal Standpoint of the Profession.

Louis E. Jallade is in charge of the series, and he has enlisted the service of a number of well-known New York architects to deliver the lectures, which will be given at the Murray Hill Hotel.

A GREAT SCULPTOR REMEMBERED

Douglas Tilden, sculptor, was the recipient of a belated Christmas present in the form of a State old age pension.

Out of the public eye for several years, Tilden was discovered destitute in a shabby studio at 834 Channing Way, Berkeley, several weeks ago by friends. Handicapped by advanced years, the artist who molded the striking "Mechanics Statue" and other well-known California sculpture groups, is reported to have been on the verge of starvation. Friends applied for a pension in his behalf and the formalities were completed Christmas when the Alameda Board of Supervisors approved the request for a pension.

Mr. Tilden plans to devote his remaining years to his art, an arrangement which can be carried out by virtue of the pension, his friends declare.

BATH ROOM COMPETITION

B. F. Blair of the Standard Sanitary Manufacturing Company announces that prize winners have been selected in the competition for two classes of better bath-room designs. Several hundred architects and draftsmen participated in the contest, which involved (1) a design for a bathroom suitable for homes costing not more than $15,000, and (2) a bathroom suitable for homes in which cost is not the major consideration.

William H. Beers, A. I. A. of New York City; General Allison Owen, F. A. I. A. of New Orleans; Addison B. LeBoutillier, A. I. A. of Boston; Louis C. Mullgardt, F. A. I. A. of San Francisco, and Eugene H. Klaber, A. I. A. of Chicago, acting as a jury, viewed the designs and made the awards.

The competition, which was international in scope, was sponsored by the Standard Sanitary Manufacturing Company.

Winners on the Pacific Coast are as follows:

San Francisco District

Theodore Criley, Jr., 249 Lowell Street, Palo Alto.

Arthur D. Jansen, 369 Pine Street, San Francisco.

E. P. Whitman, 192 Main Street, Hayward.

C. F. Reed, 206 Spazier Building, Monterey.

Raymond D. Abos, 660 Market Street, San Francisco.

R. S. De Sanno, 2337 Shattuck Avenue, Berkeley.

Leo A. Joslyn, 537 Foothill Boulevard, Oakland.

Albert F. Roller, Crocker First National Bank, San Francisco.

Will H. Toepke, 74 New Montgomery Street, San Francisco.

John Vander Linden, 901 Atlas Building, San Francisco.

J. W. Veley, 298 W. San Carlos Street, San Jose.

Los Angeles District

E. Wessel Klausen, 869 Malcolm Avenue, West Los Angeles, winner of third prize ($1000) in Class "A."

Other prize winners were:

Hans Wallner, 11134 Kling Street, North Hollywood.

Harrison Clarke, 426 North Hobart Boulevard, Los Angeles.

Miss Muriel E. Nicolias, 686 South Vermont Avenue, Los Angeles.

C. Roderick Spencer and James J. Landon, 1924 Hillhurst Avenue, Los Angeles.

Harold J. Vaile, 707 Architects Building Los Angeles.

Edwin J. Westberg, 115 No. Third Street, Alhambra.

Harry Inge Johnstone, 25 So. Euclid Avenue, Pasadena.

Wm. Lundberg, 3839 Wilshire Boulevard, Los Angeles.

Frederick Gloege, 2106 Paloma Street, Pasadena.

Lloyd A. Rucco, 3845-47th Street, San Diego.

Chas. A. Stone, 2219 Juliet Street, Los Angeles.

John Edw. Bradley, 401 No. Curson Avenue, Los Angeles.

Gene H. Brockow, 401 No. Canon Drive, Beverly Hills.

Malcolm P. Cameron, 145 No. Hamilton Drive, Beverly Hills.

Farrington & Stickney, 218 No. Beverly Drive, Beverly Hills.

Ray C. Ketterman, 227 So. Gale Drive, Beverly Hills.

Dolf Koldehofe, 4514 Saturn Street, Los Angeles.

Paul F. McAllister, 810 Portola Avenue, Glendale.

Newton & Murray, 502 Architects Building, Los Angeles.

Allen L. McGill, 2011 Taft Avenue, Los Angeles.

Glenn Evermont Miller, 154 Artesia Avenue, Long Beach.

A. S. Nibecker, Jr., 1624 Bushnell Avenue, South Pasadena.

Earl C. Rahn, 2129 West 84th Street, Los Angeles.

Geo. D. Riddle, 201 Pacific Southwest Building, Long Beach.

Ira A. Worsfold, 3619 Motor Avenue, Los Angeles.

Pacific Northwest

Richard H. Eddy, of Whitehouse & Price, Spokane

F. Omar Hughes, 410 Lindelle Building, Spokane

W. Sam Chinn, of Thomas, Grainger & Thomas, Seattle.

H. H. Hogdon, 2930 Harvard Avenue, North, Seattle.

HARDWARE IN BERKELEY LIBRARY

Sargent hardware of special design has been installed in the new Berkeley public library building by the Sunset Hardware Company, Berkeley, E. F. Louideck, manager. The hardware is in keeping with the modern expression of the building, both inside and out. The specifications were prepared by James W. Plachek, the architect.

SOUTHERN CALIFORNIA CHAPTER

At the December 9th meeting officers were elected for 1931 and delegates were named. The officers elected are: H. C. Chambers, president; Carleton M. Winslow, vice-president; H. Roy Kelley, secretary; Palmer Sabin, treasurer; J. E. Allison, director for the three-year term.

Delegates to the national convention are: William Richards, J. E. Allison, David J. Witmer, Ralph C. Flewelling, Fitch H. Haskell, Gordon B. Kaufmann and C. H. Cheney. Alternate delegates: Palmer Sabin, A. M. Edelman, Pierpont Davis, W. L. Risley, Robert H. Orr, Eugene Weston and Carleton M. Winslow.

Edwin Bergstrom made a report on the semi-annual meeting of the national directors of the American Institute of Architects held in Detroit recently. He stated that at this meeting the directors went on record that it was the stand of the Institute that the Supervising Architect's Department of the United States Treasury Department should discontinue the practice of preparing plans for government buildings and should confine its activities to supervision, maintenance and repairs. The same stand was taken relative to buildings constructed by the various state, county and municipal governments. Of the many buildings included in the present program of the United States government, but thirteen are being designed by private architects. Mr. Bergstrom said that the national directors of the Institute had also taken the stand against member architects publishing monographs in connection with material dealers or contractors.

R. Germain Hubby, who recently returned from a four months' sojourn in England, talked on his trip through that country, where he visited practically every cathedral town and place of historic interest. Mr. Hubby made about 900 photographs of various subjects, a number of which he hopes to show at a later meeting.

A. M. Edelman announced the appointment of H. C. Chambers to the California State Board of Architectural Examiners, Southern District, to fill the unexpired term of the late William J. Dodd.

John C. Austin described a trip he made to Mexico last month with a group of local professional and business men and their families, including Reginald Johnson and Donald Parkinson. The object of the trip was to establish friendly relations and most of Mr. Austin's time was devoted to contacting various public officials and business men.

H. F. Babcock, who is making an economic survey of the Bunker Hill regrade project, was introduced. It was announced that he would again be a guest of the Chapter at a future meeting, at which time he would be called upon to tell the members something of his work.

WASHINGTON STATE CHAPTER

The December meeting of Washington State Chapter, A. I. A., was held at the College Club, December 4, and after dinner, President Borhek called the business meeting to order at 7 o'clock.

The minutes of previous meetings were read by the secretary and approved, as was also the report of the treasurer. Further business was then suspended to hear the speaker of the evening, W. G. Crawford, architectural representative of the Celotex Company, who was obliged to leave early to fill another engagement.

Mr. Crawford gave a very instructive and entertaining address on acoustic correction, sound deafening and insulation. Special points brought out by the speaker were the methods for determination of the reverberation period as affecting amount and location of acoustic correction material, sound quieting by scientific methods using the "Decibel," a new unit of sound intensity; and sound insulation, preventing the transmission of sound through walls, floors, etc., and the insulation of roofs to prevent heat losses. Mr. Crawford's address, replete with valuable scientific data and illustrated by numerous graphs and diagrams, was much appreciated.

At the conclusion of Mr. Crawford's address the business meeting was resumed and the secretary read letters from various Chapters replying to Washington Chapter's communications regarding government architectural work.

In answer to inquiries regarding publicity a discussion followed during which it was reported that the Executive Board had decided against the Chapter's participation in a radio program on account of the conditions imposed and doubt as to the resulting value.

Mr. Vogel, reporting for the Legislative Committee, read a letter from the American Society of Electrical Engineers regarding a National Standard Electrical Code, and from the American Society of Civil Engineers regarding charges for engineering services and other professional matters. This last letter was referred to the Committee on Professional Practice. Mr. Vogel advocated co-operation with the engineers on legislative matters and after some discussion the

Chapter voted an endorsement of the proposed act regulating engineering practice with instructions to the secretary to so inform the local Chapter of the American Society of Civil Engineers, offering co-operation in securing its enactment.

Mr. Allen reported for the Nominating Committee the following nominations for officers to be voted on at the annual meeting in January:

President—Roland E. Borhek.

1st Vice-President—J. Lister Holmes.

2nd Vice-President—Earl N. Dugan.

3rd Vice-President—Stanley A. Smith.

4th Vice-President—John W. Maloney.

Secretary—Lance E. Gowen.

Treasurer—Albert M. Allen.

Executive Board—3 years, George W. Stoddard.

Delegates to the Institute Convention—Lance E. Gowen, Sherwood D. Ford, Nelson J. Morrison.

SAN FRANCISCO ARCHITECTURAL CLUB

The club has moved to its new home at 130 Kearny Street and the new quarters are considered to be the best the club has yet enjoyed. New pool and billiard tables, games and radios are included in the replenished furnishings. The main lounge is large and spacious with separate class rooms for Atelier and Engineers' classes, library, etc.

An attendant will be present at all times so that out of town members and guests will feel at home.

The activities in the very near future will consist of election of officers for the coming year, bridge party and dancing and general dedication of the new club rooms by President T. G. Ruegg.

A membership drive is planned during the first quarter of the present year at which time the club expects to increase its membership about fifty per cent, which will include a great many of the former members and architects in the bay district.

The educational program in class work will also be expanded.

OREGON CHAPTER, A. I. A.

The December 16th meeting of Oregon Chapter was held at the University Club, those present being Messrs. Johnson, Wallwork, Church, Tucker, Parker, Lawrence, Linde, Crowell, Bean, Forrest, Roehr, Johnston, Morin, Jacobberger, Herzog, Holford and Aandahl.

President Johnson informed the Chapter that he had received a letter from Mr. Willcox, asking if the Chapter would be interested in sponsoring an exhibition of drawings by Frank Lloyd Wright. The executive committee had taken this inquiry under consideration and had decided the expense involved would be too heavy even if it might be desirable to bring this exhibition to Portland. Professor Willcox is quite anxious to bring the exhibition to Eugene to show to the students and has been seeking the co-operation of other Pacific Coast cities. At the recommendation of the Executive Committee $50.00 was appropriated for the Educational Fund of the School of Architecture and Allied Arts, University of Oregon, to be used by Mr. Willcox for any purpose he may deem desirable.

Mr. Herzog, Chairman of the Legislation Committee, gave a report on his work in connection with the attempt to get a law passed in Oregon, whereby architectural services would be required on any building, the cost of which would exceed $10,000. After a number of interviews with various authorities he had arrived at the conclusion that it would be unwise to attempt to have such law passed at the present time, as the chances for getting it over are considered small and an unsuccessful attempt now might jeopardize future attempts.

Mr. Herzog also had a report on the proposed Housing Code which he found too exhaustive to present to the regular meeting, and on motion this was referred to the Executive Committee.

Mr. Lawrence, Chairman of the Education Committee, gave a short report, and also explained some of the points about the newly-established Ion Lewis Scholarship. The managing committee of the scholarship consists of three men, two of whom shall be members of the Oregon Chapter, A. I. A., and one member of the corps of instructors of the School of Architecture and Allied Arts of the University of Oregon. The managing committee as recently appointed are Messrs. Lawrence, Whitehouse and Whitney.

Considerable discussion took place as to whether or not the Chapter should hold an exhibition this spring. It was resolved that one should be held in March if Chairman Church of the Exhibition Committee, should find, upon inquiry, that enough support would be forthcoming.

Thomas Hansen became a Chapter Associate on August 15. By an oversight this information was omitted from the September minutes.

The Nominating Committee, consisting of Messrs. Parker, Bean, James, Logan and Tucker, announced nominations for officers and trustees for 1931 as follows: President, Harold W. Doty; Vice President,

Fred Aandahl; Secretary, W. H. Crowell; Treasurer, Harry A. Herzog.

W. G. Holford was nominated for trustee to serve three years, filling the place of O. R. Bean, whose term will expire. Holdover trustees are A. Glenn Stanton (1 year), Jamieson Parker (2 years).

FRED AANDAHL, *Secretary*.

COMPETITION FOR STEEL BRIDGE

Prizes aggregating $1700 are being offered by the American Institute of Steel Construction for the best design of a steel bridge.

There will be two competitions, each having a first prize of $500, a second of $250 and a third of $100, one going to engineering students and the other to architectural students. The first will be judged by a national jury of engineers and architects and is open to any engineering student attending a school or college in the United States or Canada. The second will be held through the Beaux Arts Institute of Design.

The problem is a monumental bridge of restrained simplicity, such as would be erected over a navigable river within the corporate limits of a city of approximately 150,000 inhabitants. It would be 80 feet wide, including two sidewalks of 10 feet each, and a total length of 1770 feet. The approaches for a distance of 165 feet would represent retaining walls and abutments. Night illumination would be provided for.

SPOKANE ARCHITECTS MEET

At the monthly informal meeting of the Spokane architectural group, December 12, the following matters were discussed:

The proposed Institute for Architects sponsored by the State College, the employment of local architects on government work, the Small House Service Bureau, and other similar problems. The outstanding problem discussed was the possibility of conducting a building census similar to that which Tacoma conducted several years ago; that is, to find how many people in Spokane are dependent for their livelihood upon the building industry. This came up because of the fact that a local job had recently been awarded to eastern architects and contractors, and while nothing could be done in this particular case, it was thought best to be ready if such matters should come up again. The possibility of an associated architects' organization for handling public work in the city was discussed. The methods used in Tacoma and Los Angeles were talked over. No action was taken on any of these matters but there was lively discussion on all topics.

HARD-EARNED WAGES

(From Johnson's Joke Book)

An artist was employed to renovate and retouch the great oil paintings in an old church in Belgium and rendered a bill of $67.30 for his services. The church wardens, however, required an itemized bill, and the following was duly presented, audited, and paid:

For correcting the Ten Commandments	$ 5.12
For renewing Heaven and adjusting Stars	7.14
For touching up Purgatory and restoring Lost Souls	3.06
For brightening up the flames of Hell, putting a new tail on the Devil and doing odd jobs for the Damned	7.17
For putting new stone in David's sling and enlarging head of Goliath	6.13
For mending shirt of the Prodigal Son and cleaning his ear	3.39
For embellishing Pontius Pilate and putting a new ribbon on his bonnet	3.01
For re-pluming and re-gilding the left wing of the Guardian Angel	5.19
For washing the servant of the High Priest and putting carmine on his cheek	5.02
For taking the spots off the Son of Tobias	10.02
For putting earrings in Sarah's ears	5.54
For decorating Noah's ark and new head on Shem	4.31
	$67.30

DECAY OF ROOFING SLATES

A report issued by the United States of America Bureau of Standards, amongst other things, says that "It is evident that some slates cannot be depended on for more than thirty years of service on a roof.

"The decay of slate on a roof is confined mainly to the covered portions, or the lap, and manifests itself by a slow process of crumbling and scaling in thin layers. Chemical and petrographic examination of the decayed portions reveal the presence of considerable calcium sulphate, although this compound is almost totally absent in the fresh slate."—*Building*.

ADDRESSES REALTY BOARD

HARLAN THOMAS addressed the Seattle Real Estate Board at a meeting October 24, and took occasion to urge support for adequate city planning to provide for the city's growth, and also suggested the appointment of a contact committee to confer with the architects on matters of mutual interest.

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Slowly at first, but with increasing rapidity, the use of lacquer for interior finishing is making headway.

Greater beauty and greater durability is obtained, and days of time saved. This latter feature is extremely important, for in almost all cases the owner is anxious to either occupy or lease his building.

Among the important interior work recently finished or refinished with Nason's Lacquers are:

Christian Science Benevolent Association Sanatorium	Henry Gutterson, *Architect*
Fourth Church of Christ Scientist	Henry Gutterson, *Architect*
Burlingame Baptist Church	Jas. Mitchell, *Architect*
Dr. Green's Eye Hospital	Fredk. H. Meyer, *Architect*
Residence of Mr. Geo. Wagner	Bakewell & Weihe, *Architects*
Residence of D. J. Tight	Henry Gutterson, *Architect*
Residence of Mr. J. D. Bromfield	Farr & Ward, *Architects*
Residence of Mr. W. W. Holt	Jas. Mitchell, *Architect*
Title Insurance & Guarantee Company Building	O'Brien Bros. & Peugh, *Architects*
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When patents were recently applied for on the method of production and the composition of a new stone product known as "Rostone" the first successful step had been taken in an entirely new field of technology.

Experimentation in silicon technology began about seven years ago by Professor Harry C. Peffer, head of the School of Chemical Engineering at Purdue University, and Richard L. Harrison, a chemical engineer, in co-operation with David E. Ross, of Lafayette, Indiana, has resulted in the discovery of this new product, Rostone.

Chemically, the material resembles anorthitè, one of the felspar group, yet it possesses many of the favorable features characteristic of synthetic products. An enumeration of these features is given as follows: (a) The material is close grained and in forming readily takes the finest impressions; (b) It is lighter than natural building stones and ordinary concrete; (c) It is tough and will dent before breaking if struck with a hard object, thus demonstrating its high resistence to impact, as compared with other materials of its class; (d) It is highly resistant to the action of ordinary chemical reagents as well as to other tests which are destructive to natural and artificial building materials; (e) It is highly fire resisting; (f) It has an average compressive strength which is higher than for most natural and artificial building materials; (g) It can readily be cut, carved or sawed, and takes a polish like natural building stones; (h) It can be colored in the process of forming and retains such colors without change, thus lending itself to highly decorative effects; (i) It unites firmly with metal or other substances, thus readily permitting the use of reinforcing, or the use of aggregates, which it will securely bond.

With these qualifications in mind chemists believe that the new material will find wide application for structural, ornamental, and decorative stone work of many types. It is formed of natural argillaceous materials found in abundance in many sections of this country. The process of manufacture, amazingly simple and economical, consists almost entirely in the scientific control of conditions. Like other contributions of chemistry to the industrial world, its bid for success is based entirely on superiority to existing products and usefulness to mankind.

SEATTLE BUILDING OUTLOOK

Seattle has a building program on the boards totaling $16,000,000, which is twice the volume of activity reported for the corresponding period of 1929-30. The proposed structures include the University Community Hotel, to be named the Edmond Meany Hotel. It will be 16 stories high with 150 guest rooms. Adjoining the hotel there is to be a three-story garage of fireproof construction to cost $100,000. R. C. Reamer is the architect.

Another important structure planned is a 23-story apartment hotel to cost $2,000,000, construction to be started by February 1. Gibson & Hudson, Inc., are to be the builders. It will provide 300 apartments.

The most important office building structure under way is the City Light Tower, which has just been financed. An addition to the Leary Building, the Textile Tower, several important additions to the buildings on the University of Washington Campus and a number of small apartment houses all are on the architects' boards, to say nothing of the new Federal Building and the Marine Hospital, which add to the volume of this class of construction.

The new assembly plant to be erected by the Ford Company is the most pretentious industrial structure under way. It will cost $3,000,000, will consist of an "L" shaped structure, in part three stories high. There will be ten acres of floor space.

ARCHITECTS' LEAGUE, HOLLYWOOD

The Architect's League of Hollywood had as its guests at one of the regular Wednesday luncheon meetings, officers of the Hollywood Boulevard Development Association. Col. Harry M. Baine, president of the Development Association, spoke on "Future Building and Co-operation With Architects," and C. E. Toberman, vice-president, talked on the "Building and Financial Future of Hollywood."

SEBASTOPOL SCHOOL

Davis-Pearce Company, Stockton, have been commissioned to prepare plans for a Class C high school building at Sebastopol for the Analy Union High School District. A bond election for $250,000 will be held.

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GRANTED CERTIFICATES

California State Board of Architectural Examiners issued provisional architects' certificates on November 25 to the following: Miss Edith Northman, 5369 Wilshire Boulevard, Los Angeles; Samuel W. Hamill, Bank of Italy Building, San Diego; Rudolph A. Polley, Santa Barbara; Harry B. Aarens, 1558 Vine Street, Hollywood; Alexander N. Knox, 816 West 5th Street, Los Angeles; Otto G. Hintermann, 74 New Montgomery Street, San Francisco; Dole F. Thomson, 179 Lincoln Avenue, Palo Alto.

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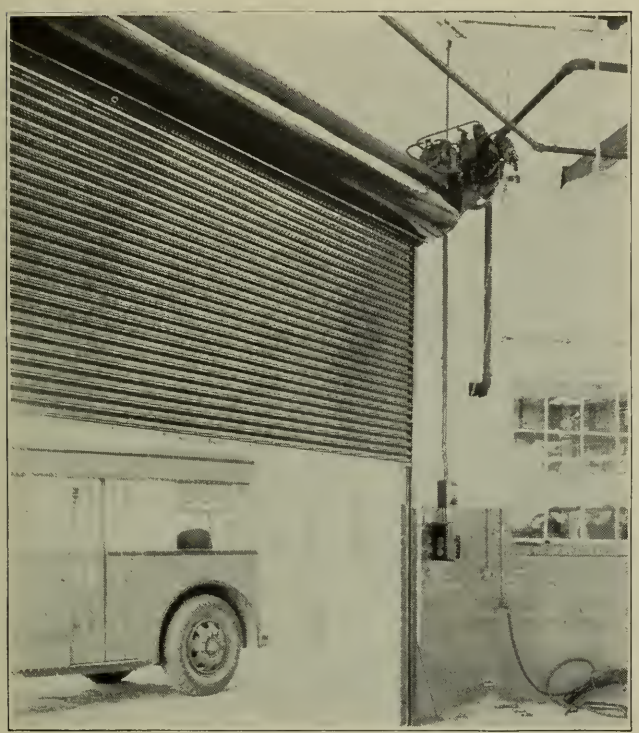

(Photo of Kinnear Door in their New Bus Terminal Garage)

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Bus Transportation Maintenance
Award for 1930 . . . . . .

So do all firms who will be satisfied with nothing short of the BEST . . . And there is a very good reason for this: Kinnear *originated* the interlocking steel rolling door . . . Kinnear's entire 12-acre plant devotes its entire energies to perfecting one product — ROLLING DOORS . . . and every Kinnear door is made and *engineered* "to order". Send for your free copy of the Kinnear catalog and details of Kinnear Engineering and Estimating Service available without cost or obligation.

THE KINNEAR MANUFACTURING CO.
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Boston Chicago Cincinnati Cleveland Detroit New Orleans
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OPERATION OF REGISTRATION LAWS

Six thousand civil engineers will have been registered in California by February, it is indicated by the report of James F. Collins, director of Professional and Vocational Standards, submitted to the Governor's Council at Sacramento. A marked decrease in the number of complaint cases against contractors set for conferences and hearings is also reported. Following are excerpts from the director's report:

Up to October 31 there had been mailed out approximately 9770 sets of application blanks used by the board in passing upon the qualifications of candidates for registration as civil engineers under the California law. On the same date the board had received a total of 5771 formal applications for such registration.

Of this number a total of 4820 had been formally approved. Certificates had been issued to 4700 duly registered civil engineers. This is an increase of approximately 700 certificates issued since the previous report. The work of issuing the balance of certificates to those properly qualified is progressing satisfactorily.

Another marked decrease in the number of complaint cases set for conferences and hearings is noted in the report covering the activities of the contractors' registration section for October. The decrease is partially the result of an effort on the part of those in charge of this phase of the work to settle a large number of such complaints without bringing them to the formal conference or hearing stage. In many such cases a bringing together of all parties involved has served to settle a complaint satisfactorily.

During October there were 37 cases growing out of complaints which, it was decided, should be set for formal conference. This figure is in marked contrast with the total of 95 cases so handled in September and 140 in August.

Disposition of the cases set for conference in October was as follows: Settled as result of conference, 4; dismissed at conference for lack of jurisdiction, 6; pending final settlement, 27.

Disciplinary action growing out of evidence produced at conferences in October was as follows: Licenses suspended, 5.

A total of six licenses, ordered suspended as a result of conferences held in previous months, were ordered reinstated.

Prosecution in court was deemed necessary in one case growing out of a complaint. The defendant was charged in justice's court at Watsonville with operating as a contractor without a license, in violation of the law, and was found guilty. He was fined $100, the court suspending payment of part of that amount.

Architectural Examiners

Cancellation of the licenses of three persons on the roster of the Board of Architectural Examiners, Northern District, reduced the total number of architects operating under this board's jurisdiction to 514.

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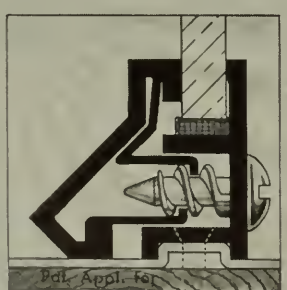
KAWNEER EXTRUDED SASH KE-B-1



EXTRUDED MEMBERS TO MATCH

SEND FOR DESCRIPTION AND F. S. DETAILS OF "B" CONSTRUCTION

THE Kawneer COMPANY

NILES, MICHIGAN, Subsidiary BERKELEY, CALIFORNIA
RUSTLESS METAL STORE FRONTS, WINDOWS and DOORS
ALSO ORNAMENTAL BRONZE AND IRON

Prosecution in court was resorted to by the board in the case of one offender who, posing as an architect, exacted a large fee from a client for services. The man was convicted of operating as an architect without a license and was given a suspended sentence of $100 fine or 30 days in jail.

Investigations were launched in seven cases involving complaints, and at the close of the month 27 investigations were pending completion.

The granting by the Board of Architcetural Examiners, Southern District, of six new licenses during October increased the total of licentiates operating under this board's jurisdiction to 706. This total was reduced, however, with the cancellation of 21 existing licenses through the death or failure of licentiates to pay their annual fees. The total number of licentiates as of October 31 was, therefore, 685.

Prosecution of two persons in the courts of San Luis Obispo for operating as architects without having first secured licenses were brought to a successful conclusion when the court held both defendants guilty. Sentences of 30 days in jail were suspended by the court, pending the good behavior of the defendants.

KAWNEER IN BERKELEY LIBRARY

The new Berkeley Public Library Building, designed by James W. Plachek, in the modern trend, represents a departure in public buildings. in California.

The style presented a new problem in window and entrance door design that was splendidly solved by the Kawneer Manufacturing Company of Berkeley, under the supervision of Mr. Plachek.

The windows are extremely large, giving the appearance of narrow vertical lines, with modernistic glass mouldings, sills, etc., and finished in a tone to harmonize with the rich color scheme of the building.

The entrance doors are hollow metal with heavy bronze jambs, finished in two tone chromium and bronze with modernistic lines, giving a massive appearance in scale with the entrance detail.

INSPECTION OF WELDED STEEL

Franz Eder, mechanical engineer for the Robert W. Hunt Company, recently read an instructive paper before the annual convention of the International Acetylene Association at Chicago, on "Inspection of Welded Steel Framing in Buildings." San Francisco has just had its first experience with an electrically welded steel frame, tests of which are described on another page of this issue. The Robert W. Hunt Company were in charge of the inspection work. Mr. Eder, in his paper, predicts rapid advancement of fusion welding of buildings within the next few years. He cautions care in the selection of competent welders and with men of this type on the job plus competent inspection, the success of fusion welding is assured, he says.

ARCHITECTS AND FEDERAL BUILDINGS

That West Texas Chapter, A. I. A., is firmly convinced that Federal architectural work participated in by members of the profession in good standing, is beneficial to the government and assurance of good architecture and low building costs, is indicated in the following letter addressed to President Hoover, Robert Kahn, President of the American Institute of Architects, and others:

"The West Texas Chapter of the American Institute of Architects feels that you would be interested in the construction now under way at Randolph Field, Texas, and the part taken in this work by San Antonio architects.

"This field is to be, as you may know, the chief aviation school of the U. S. Army and is a project of considerable magnitude, housing ultimately a personnel of about five thousand.

"The Quartermaster Corps of the Army started the preparation of plans for this work. Seemingly it was beyond their capacity. Prosecution of the work was lagging, due to waiting for plans and to further delays caused by the necessary revision of plans to come within the appropriations.

"To expedite the work and in accordance with the recommendation of President Hoover, eleven San Antonio architects were selected and commissioned to prepare plans for some of the buildings. This, in the aggregate, amounted to a large percentage of the whole. There was no appropriation for one of these jobs and figures have not as yet been taken on one other. Of the remaining nine all but two were let on first opening of bids and came within the appropriation. Of these two one exceeded the appropriation and while the other came within the appropriation, the architects were instructed to revise plans for increased size of building. This was let on second opening and came within the appropriation.

"In mentioning this we do not intend to cast any reflection on the Quartermaster Corps. We have found that in this Corps there are men of ability who are well qualified for construction work. We do, however, feel it to be an indictment of what, up to recently, has been the practice of the U. S. Government to entrust to one or more departments of the Government in Washington, the architectural work, in its entirety, of government construction throughout the Nation.

"It is manifestly unfair to assume that such an isolated department can design the work as well and spend the National funds as intelligently as the leading architects in the different localities who not only have made it their life work to gain their architectural knowledge and experience but who are also more familiar with local conditions, such as climate, character of foundations, available materials, methods, etc. This also applies to the consulting engineers, both structural and mechanical, who work in conjunction with the architects. In selecting architects the government can

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There's a size and grade for every type of structure, new or old. Ask your architect or building contractor for an estimate.

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RESILIENCE is the "Safety-Factor" found exclusively in Brownskin Building Paper. This dominant feature permits Brownskin to stretch and conform to building strains, settling and shrinkage without breaking or dragging from the nails.

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readily ascertain their qualifications for any particular class of work.

"It may be argued that competent local architects are not everywhere available. This, in some cases, may still be true, but it is rapidly ceasing to be a fact. An examination of the work published in architectural magazines should be convincing."

WASHINGTON STATE CHAPTER

The regular Chapter meeting for November was held on the evening of November 10th, in the Architectural Building at the University of Washington, in conjunction with the students of the Department of Architecture. The meeting was preceded by a dinner in the main drafting room of the Department, the room being effectively decorated for the occasion. The main decorative theme was Russian, the walls treated in red with a large tapestry painted by the students, flanked with massive candlesticks, at the speakers' table. Besides the Chapter members, there were present about ninety architectural students, about twenty draftsmen, and besides Professors Thomas, Herrman and Gowen, members of the Chapter, there were present from the faculty of the University, Professor Walter Isaacs, Acting Dean of the College of Fine Arts; Professor May; and Messrs. Pries, Pierce and Sergev. The dinner, consisting of Zabuska, Borsh, Kotlete, Sledkoe and Koffee, was enlivened by an orchestra, student songs and the Scandinavian accent of Toastmaster Charles Pearson, Massier of the students, who presided.

At the conclusion of the dinner, Toastmaster Pearson, with some appropriate remarks, paved the way for President Borhek of the Chapter to conduct the business meeting.

Mr. Gove was asked to report for the Education committee, particularly the results of a sketch competition, which the committee had sponsored during the summer among the draftsmen of the state, these sketches being exhibited in the library of the Architectural Building and adding materially to the interest of the meeting. Ninety-five sketches were entered in the competition and Norman E. Fox, Ralph Bishop and C. R. Butcher were awarded prizes in different classes as follows: brick work, wooden buildings, stone buildings, historical and picturesque. Honorable mentions were awarded to John G. Richards, Harry Wolfe, Edward Young and John Villesvik. Eighteen sketches were entered by the students in the Lewis and Clark high school, Spokane.

The Chapter meeting was adjourned after hearing Mr. Gove's report, and Toastmaster Pearson again presiding, called upon A. H. Albertson to address the gathering.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—

Common, $28 to $33 per 1000 laid, (according to class of work).
Face, $70 to $90 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $.90 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.80 sq. ft.
Common, f.o.b. cars, $10.00 plus cartage.
Face, f.o.b. cars, $40.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 75.00 per M
4x12x12 in.	85.00 per M
6x12x12 in.	124.00 per M
8x12x12 in.	188.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$87.00
6x12x5½	60.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—60c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.

Terazzo Steps—$1.50 lin. ft.

Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Eliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
Eliott top gravel, at bnkrs.	1.40 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) $2.64 per bbl.
Cement (f.o.b. Job, Oak.), $2.64 per per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Atlas "White" .....$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4½ inch Concrete Basement floor .....13c to 14c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps.....$1.10 per lin. ft.

Dampproofing—

Two-coat work, 18c per yard.
Membrane waterproofing—4 layers of saturated felt, $5.00 per square.
Hot coating work, $1.80 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).
Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—

Sand, 50 cents; clay or shale, $1.00 per yard.
Teams, $10.00 per day.
Trucks, $21 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 80c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c square foot.
Note—Add extra for setting.

Heating—

Average, $1.70 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

Common, $22.00 per M (average).
Common O. P. select, average, $30.00 per M.

1 x 6 No. 3 Form lumber	$16.00 per M
1 x 4 No. 1 flooring	46.00 per M
1 x 4 No. 2 flooring	40.00 per M
1 x 4 No. 3 flooring	36.00 per M
1 x 6 No. 2 and better flooring	40.00 per M
1¼x4 and 6 No. 2 flooring	50.00 per M

Slash grain—

1 x 4 No. 2 flooring	$33.00 per M
1 x 4 No. 3 flooring	30.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	3.50 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

	13-16x2¼" T&G	⅝x2" T&G	5-16x2" Sq.Ed.
13-16x3¼" T & G Maple	$130.00 M ft.		
1 1-16x2¼" T & G Maple	140.00 M ft.		
⅞x3½ sq. edge Maple	127.00 M ft.		
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	

Laying & Finishing 16c ft. 15c ft. 13c ft.
Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$2.80
2 ply per 1000 ft. roll	4.20
3 ply per 1000 ft. roll	6.50
Sash cord com. No. 7	$1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $45.00 ton
Nails, $3.00 base.
Belgian nails, $2.75 base.

Millwork—

O. P. $80.00 per 1000. R. W., $80.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.00 and up. each.
Doors, including trim (single panel, 1¾ in. Ore. pine) $6.75 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 20c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $5.00 each.
Dining room cases, $6.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.
For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo.	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

Tennessee	1.70 sq. ft.
Verde Antique	3.00 sq. ft.

NOTE—Above quotations are for ⅞ inch wainscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique	$2.50 sq. ft.
Tennessee	1.50 sq. ft.
Alaska	1.35 sq. ft.
Columbia	1.45 sq. ft.
Yule Colorado	1.45 sq. ft.
Travertine	1.60 sq. ft

Painting—

Two-coat work	30c per yard
Three-coat work	40c per yard
Cold Water Painting	8c per yard
Whitewashing	4c per yard

Turpentine, 78c per gal. in cans and 63c per gal. in drums.

Raw Linseed Oil—$ .81 gal. in bbls.
Boiled Linseed Oil—$.84 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	12¼c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	12¼c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	13¼c
500 lb. and less than 1 ton lots	14c
Less than 500 lb. lots	14½c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.85 lineal foot
12-inch	2.10 lineal foot

Pipe Casings — 12" long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.40
2 coats, lime mortar hard finish, wood lath	.52
2 coats, hard wall plaster, wood lath	.55
3 coats, metal lath and plaster	1.00
Keene cement on metal lath	1.25
Ceilings with ¾ hot roll channels metal lath	.67
Ceilings with ¾ hot roll channels metal lath plastered	1.40
Shingle partition ¾ channel lath 1 side	.62
Single partition ¾ channel lath 2 sides 2 inches thick	2.20
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	2.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Atlas cement, brick or concrete wall	1.25
3 coats cement finish No. 18 gauge wire mesh	1.75
3 coats Atlas finish No. 18 gauge wire mesh	2.05
Wood lath, $4.50 per 1000.	
2.5-lb metal lath (dipped)	.18
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.23
3.4-lb. metal lath (galvanized)	.27

¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, $13.85 (rebate 10c sack).
Dealer's commission, $1.00 off above quotations.
Hydrate Lime, $19.50 ton.
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—

From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $5.00 per square for 30 squares or over.
Less than 30 squares, $5.25 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—

Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, $1.00 sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Stone—

Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 70c per lineal foot.
Note—Consult with agents.

Steel Structural—$90 per ton (erected). This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $86.00 to $90.00 per ton.

1931 WAGE SCHEDULE FOR SAN FRANCISCO BUILDING TRADES

Fixed by the Impartial Wage Board

Craft	Journeymen Mechanics
Asbestos workers	$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00
Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housesmiths, arch. iron, skilled all branches	9.00
Housesmiths, arch. iron, not skilled all branches	8.00
Housesmiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scraper teamsters, 2 horses	6.00
Scraper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Friday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturdays, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

Mr. Albertson spoke on the history, traditions and organization of the American Institute of Architects.

At the conclusion of Mr. Albertson's address, Mr. Pearson thanked him in behalf of the students and also thanked the other architects and draftsmen for their presence. He then called upon Richard Lytel, a student at the University who was last year's recipient of the Fontainebleu Scholarship. Mr. Lytel spoke entertainingly of his sojourn at Fontainebleu.

THE "VICIOUS CIRCLE"

The Structural Engineers Society, with headquarters at 370 Lexington Avenue, New York, has something to say in its latest Bulletin (No. 21) with reference to the so-called "Vicious Circle," a form of clientele that is ever looking for "bargains" in building design and construction. To quote:

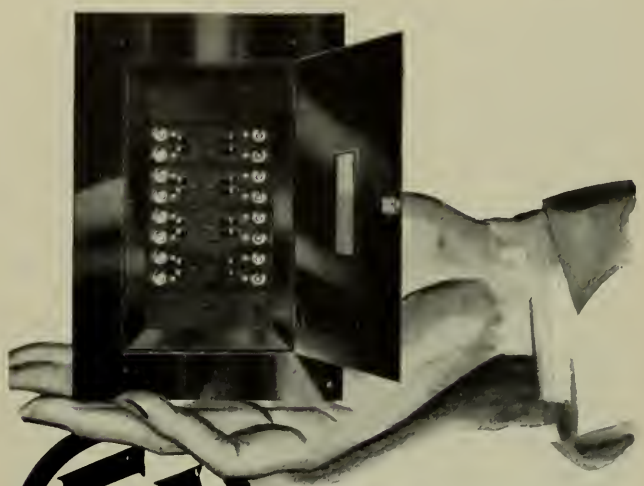
"Economists are always referring to the 'vicious circle' and deplore its existence. What has the vicious circle to do with structural engineering? It has plenty, and to do with all other phases of professional engineering for buildings. How to best break this vicious circle is a problem that confronts every element of the building industry.

"The usual source of the vicious circle that entangles the structural engineer and others, is found in the owner. The owner, of a kind, is totally ignorant of the real function and value of the services of the architect and the structural engineer. He starts the vicious circle by jobbing out the architectural service to the lowest bidder and the hunt is on!

"As an example: an apartment hotel costing several millions of dollars, located on an important thoroughfare, was offered to a high-grade architect for a fee of $25,000. The architect refused this commission because he could not render his quality and kind of service for a sum far exceeding $25,000 and he was not disposed to do an inferior job, contribute a cash donation to the owner and injure his reputation. The owner 'peddled' the job until he secured the services of a prolific architectural producer. This architect, following his usual custom, called in several structural engineers to bid on the engineering service at a price based on hundreds of dollars where thousands of dollars should have been the units for compensation—and so on down the line. The architect, by taking the work below cost, was economically compelled to pass *his* loss on to the others. The owner-speculative-builder sublets the work to incompetent sub-contractors at a below-cost price, and everybody loses. Even the owner will lose in the end because he has a sub-grade building in design, plan and construction that will soon become obsolete in competition with high-grade structures planned and constructed by adequately paid architects, engineers and contractors.

"Another building that is touted as one of the largest of its kind in America, costing upwards of $10,000,000, was designed on an architectural fee said

At *your service*



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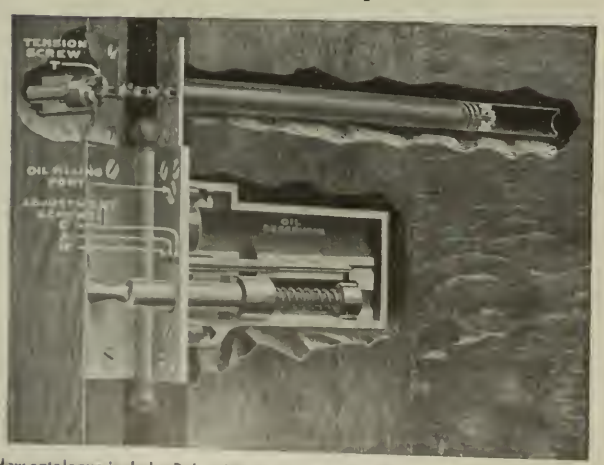

New catalogue includes Robert W. Hunt Company, Engineers, endurance test report

THE CONDOR COMPANY

58 SUTTER STREET, SAN FRANCISCO

on good authority to have been $60,000. A sub-contractor was requested to and did furnish a large amount of expensive expert and competent engineering service ('free engineering service') to produce suitable and economical plans and specifications—with the illusionary prospect of getting the 'inside' on the job. Inside! ----! ! There was no 'inside.' After the owner peddled assiduously, lowered the quality of materials and equipment and landed a below-cost bid he offered the job to the contractor first before mentioned 'at a price,' which was refused and another below-cost contract was closed; all of which is not calculated to promote the best interests of Public Safety and Welfare.

"Again another vicious circle is set up frequently by a much-advertised, meteorically successful Owner-Engineer-Contractor organization that callously reckons that it will require ten years for it to 'break' all of the sub-contractors in New York. There are others of this same ilk. Necessarily the structural engineer is 'broken' also, with impunity wherever and whenever possible.

"This is not a pleasant subject and the conditions described are not of the structural engineers' own making—they are the hangover from their early environment—and it is mentioned with great reluctance. But in what other manner can the facts be discussed and a possible solution of the difficulty be discovered? The structural engineer is employed usually by the architect. Such a relationship with the 'fair play' architects is entirely satisfactory. Such a relationship with the underpaid architect is impossible.

"Two groups of sub-contractors in a large western city became dissatisfied with the peddling of their bids by certain general contractors. These two groups organized and bid only to architects and owners and made contracts only with owners. It worked and the two groups of sub-contractors began to and do enjoy a profitable business.

"Can structural engineers refuse to accept employment except from owners? As far as the underpaid architect is concerned, he cannot pay an adequate fee for engineering service and is not justified in making an objection to the proposal. Would it be unjust to the high grade, adequately paid architect? How can the two kinds of architects be differentiated successfully? Knowing that 'fair play' is an effective element in the personal ethical code of high-grade architects, will they not favor the employment of the structural engineer, who is satisfactory to them, by the owner direct?

"One thing is certain, the practice of every profession must be reasonably profitable if it is to progress in knowledge and skill and to assume and discharge its tremendous responsibilities. The building industry requires the finest type of structural engineering service—and apparently this can be made available only by breaking the 'vicious circle' described."

METAL CONGRESS IN FEBRUARY

Metals of every kind used in the process of building will be discussed from the production, installation and preservation angles, when the Western National Metal and Machinery Exposition is held February 16 to 20 in the Civic Auditorium, San Francisco.

Noteworthy speakers, identified with the metal and machinery industries, are scheduled to deliver technical papers on the several programs, according to W. H. Eiseman, of Cleveland, secretary of the American Society for Steel Treating.

Researches of the American Chemical Society, which has been delving recently into matters pertaining to structural steel and the chromium alloys or stainless products used for duty exposed to the weather, will be explained.

Discoveries of the American Welding Society in the erection of structural steel, as well as the preparation of the product, will also be discussed.

On one of the two half-day sessions of the American Welding Society, A. F. Davis, of the Lincoln Electric Company, Cleveland, will deliver a review of electric arc welding.

Another speaker on the same program will be J. C. Hodge, metallurgist of the Babcock and Wilcox Company, Beaver Falls, Pa., who is to discuss fusion welding. M. C. Smith, of the Stoody Company, Whittier, will talk on alloy overlays.

One of the most interesting papers, from architectural and building standpoints, will be that of F. N. Speller, of the National Tube Company, Pittsburgh, whose topic will be "Corrosion Discoveries, as Made in the Year 1930."

Announcement has been made by Mr. Eiseman that invitational tickets of admission, both to the convention and to the exposition, will be mailed any architects, engineers or builders who communicate with him, expressing an interest in the double affair.

In announcing the event he described its general appeal in the words:

"If one's work touches in any way on the production, selection, fabrication, inspection, treatment, welding, preservation or application of metals, this congress and exposition will supply a week of valuable educational facility."

The thirteen different technical engineering societies taking part in the affair are as follows:

American Chemical Society, American Institute of Electrical Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, American Society for Steel Treating, American Welding Society, Institute of Metals, National Purchasing Agents Association, Pacific Coast Electrical Association, Pacific Coast Gas Association, Society of Automotive Engineers, American Society for Testing Materials and National Association of Power Engineers.

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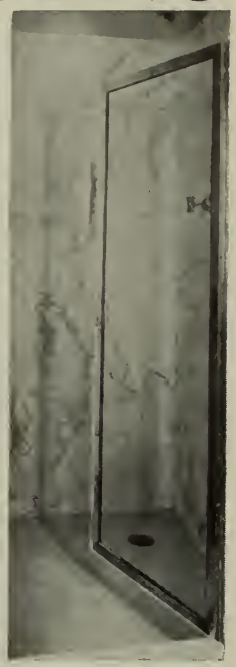

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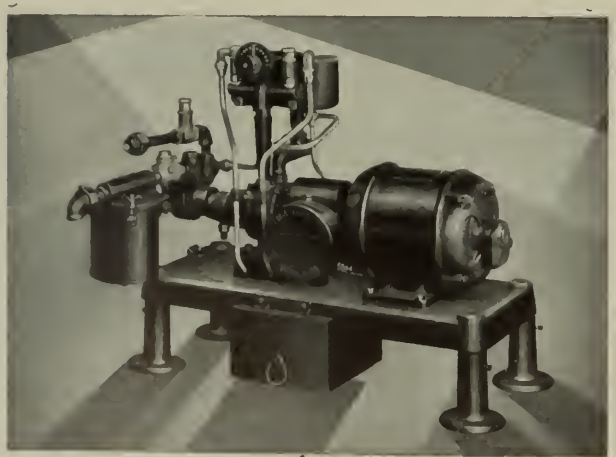

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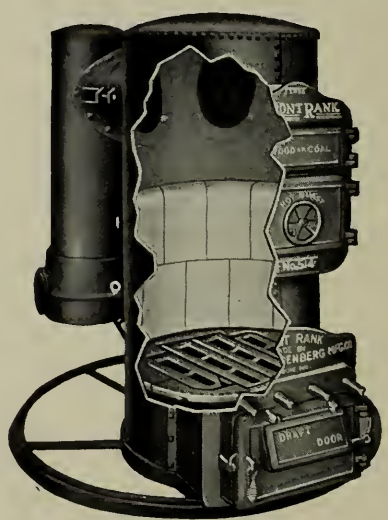

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OBSOLESCENCE OF MODERN SKYSCRAPERS

Skyscrapers, raising their heads far above city streets, present a picture of solidity and permanence, yet it is unsafe to predict a useful economic life of more than thirty years for them, according to findings of the National Association of Building Owners and Managers, in a recent report.

"The useful life of office buildings is much shorter than most people presume," said A. W. Warner of New York City, Chairman of the Association Committee on Obsolescence. "Skyscrapers don't wear out. They are torn down before old age creeps upon them and are replaced by structures that are more suitable to modern requirements. Style is as important in the office building field as it is in women's wear. Style, however, in skyscrapers is evidenced by an increasing utility and an improvement in service.

"There are five factors of obsolescence affecting the useful life of skyscrapers, which usually operate to cut short the life of the buildings before actual wear and tear has had much influence. They are:

"Growth of business district.

"Shifting in location of the business district.

"Erection of newer buildings of a different type.

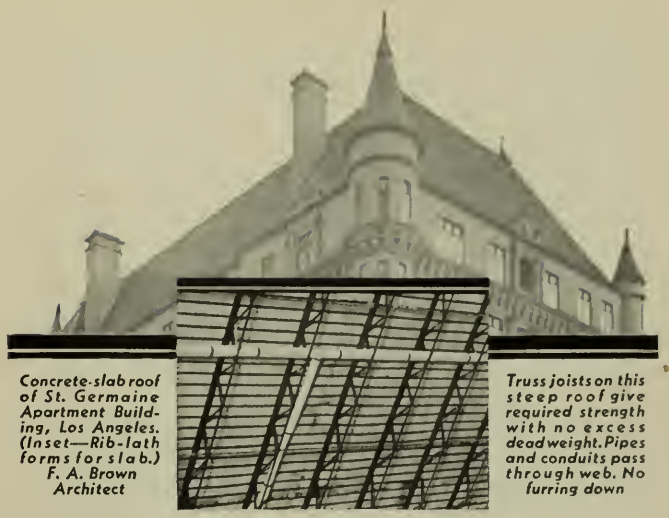
"The greater efficiency in the layout and operation of the newer buildings; and

"Damage caused by new buildings, cutting off light, air, etc."

Earle Shultz, of Chicago, member of the Committee on Obsolescence, stated that "America's first skyscraper of the modern steel structural design, the Tacoma Building of Chicago, was razed after thirty-five years. During the latter part of its life it was manifestly obsolete. Another pioneer, the Home Insurance Building of Chicago, will be torn down this year to make way for a new office building. In the sixty years since the Chicago fire practically the entire loop district of Chicago has been rebuilt twice, more than half of it three times and much of it four times. A survey of lower Broadway in New York City, shows that there are only three buildings more than forty years of age, all of which are marked for demolition except one, which has been substantially rebuilt within the last ten years. Only seventeen buildings are more than twenty-five years old in that section of New York City.

"There are new developments in the offing which will make the obsolescence factor operative on the buildings recently completed, just as the improvements with which we are familiar have rendered the older buildings obsolete. Great developments are being made in elevators, air conditioning, lighting, heating, and other service features. As these come into use the buildings equipped with them will possess an economic advantage that will increase as the years go by."

The obsolescence committee has presented the re-



Concrete-slab roof of St. Germaine Apartment Building, Los Angeles. (Inset—Rib-lath forms for slab.) F. A. Brown Architect

Truss joists on this steep roof give required strength with no excess deadweight. Pipes and conduits pass through web. No furring down

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sults of its study to the Bureau of Internal Revenue in Washington as a guide in the formation of a tax schedule for the use of the skyscraper owners throughout the nation.

PORTLAND PROJECTS FOR 1931

Portland's building records show a value of $12,500,000 for its construction program. There are on the architects' boards plans for structures to cost $10,000,000. This includes designs for two office buildings, one to represent an investment of $3,000,000, the second $1,600,000. A residential hotel to cost $3,000,000 is another outstanding feature. In addition, the structures contemplated include a seven-story apartment house to cost $125,000, a federal building, a hospital, a garage, a small bank structure, a sports arena and miscellaneous industrial buildings.

The two outstanding office building structures to be begun during the current year include the Commonwealth Building, which will house the corporations affiliated with the Commonwealth Trust & Title Company, and provide more than 100,000 square feet for rent to the general public. It will be 23 stories high, with setback at the 20th story, on a plot 150 by 100 feet. Plans are all complete and work of erection will be begun early in the year. The second structure proposed is a 12-story office building, on 100 by 100 feet, to provide a total of 80,000 square feet of rentable area. Work on this project will begin in July, 1931. Apartment houses to cost $425,000 and a garage to cost $45,000 are also under way.

BOOK REVIEWS

By Edgar N Kierulff

CLAY PRODUCTS MANUAL — Clay Products Institute of California, 116 Natoma Street, San Francisco, and Architects' Building, Los Angeles. Price $3.00.

A pocket-size book containing valuable information and data on all day building products. Much of this data is compiled from such sources as the U. S. Bureau of Standards, National Board of Fire Underwriters, American Face Brick Association and recognized hand and text books.

The Manual includes besides other sections, the following: Mortar, Brick, Partition Tile, Terra Cotta, Roof Tile, Drain Tile, and under general data, several sub-sections such as fire and thermal resistance, painting and waterproofing, earthquake resistance and sound resistance.

The Clay Products Institute announces that copies are being distributed upon written request to certified architects and engineers, and to a limited number of others directly connected with the building industry.

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IN the manufacture of Hazacode Building Wire only NEW Hevea rubber is mixed with chemically pure fillers to make the insulating compound. This use of new rubber, instead of reclaimed rubber or rubber substitutes, accounts for the superior resistance of Hazard Wires and cables to the deteriorating effects of time. It explains why so many conservative architects and builders *specify* it for use in their important jobs.

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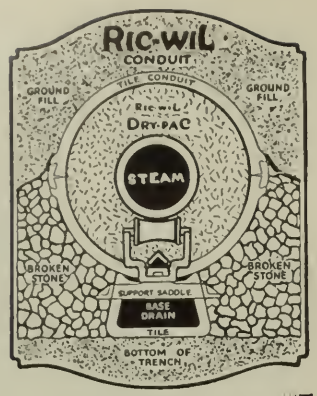

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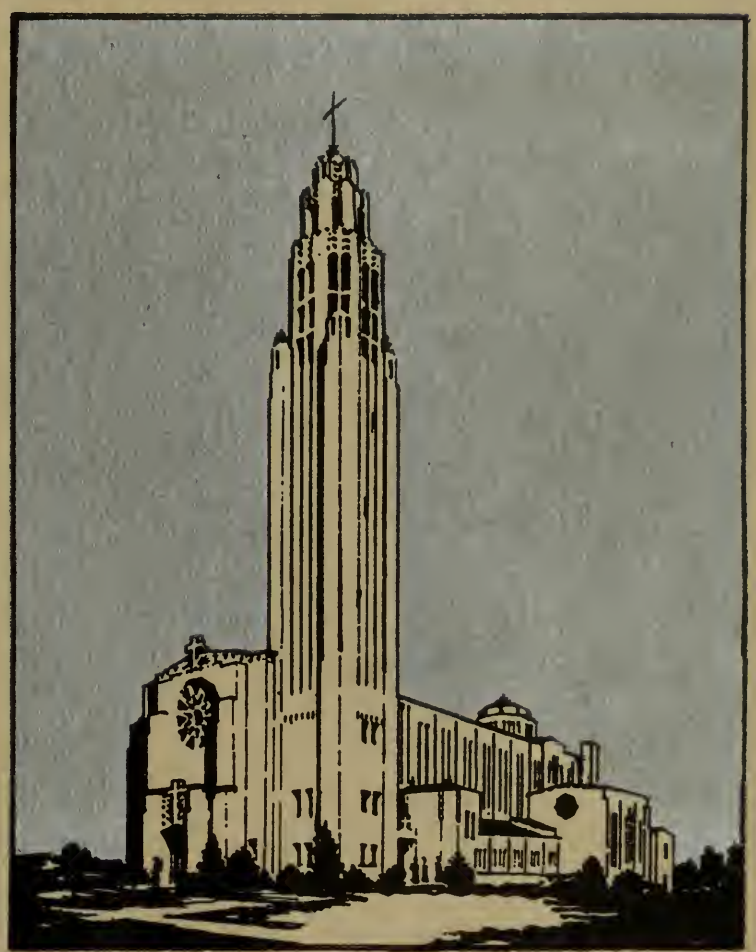

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1931

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ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

THE
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FEBRUARY 1931
VOLUME 104
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ST. JOSEPH'S CHURCH, SEATTLE, WASH.

An Expression of the Modern Trend

by A. H. ALBERTSON, F. A. I. A.

A CHURCH of a thousand seats for $300,000. Could it be done, including an equal area of institutional space? The church designed in modern architectural terms without the more elaborate forms of traditional architecture would be less expensive but could it express the tradition of the Catholic Church whose policies are long and historical? Could modern expression fulfill a traditional use?

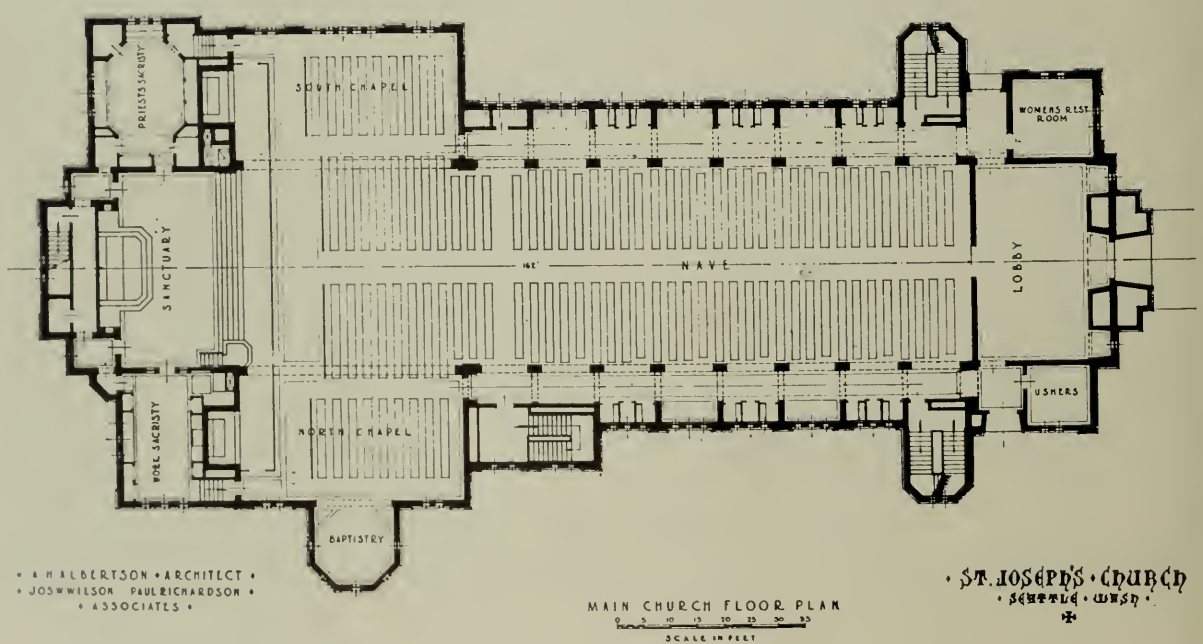
These were a few of the problems that confronted the architect and his client, St. Joseph's Church of the Jesuit Order, Seattle, Washington. In order to make sure that a right decision be made two distinct sets of sketches were developed; one set followed the traditional forms of architecture and the other followed modern expression. Both were submitted to the church authorities, their implication discussed and it was in the end decided that modern forms were appropriate if designed strictly to accommodate and follow closely the established liturgical requirements of the church.

It is believed the structure is a true evolvement of its ritual purposes, although different as a development in form and material from the time-honored Gothic or Italian renaissance native to the Mother country. At no point does the modern form tend to constrain or modify any of the traditional or religious functions of the Church. On the other hand, the plan and section meticulously follow traditional usage, and assuming a purposeful development, the final visual form in which the edifice is cast should, irrespective of whether modern or whether traditional, of natural consequence reveal the nature of the religious urge which produced it as well as the impressive and spiritual purposes of a great church.

Further, assuming that such purposes may be

DETAIL OF MAIN CROSSING PIERS, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

VIEW FROM THE EAST, ST. JOSEPH'S CHURCH,
SEATTLE, WASHINGTON
A. H. Albertson, Architect; Jos. W. Wilson, Paul Richardson, Associates



PLAN, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON
A. H. Albertson, Architect; Jos. W. Wilson, Paul Richardson, Associates

sympathetically revealed by modern forms, then it may be urged that such forms are also liberating and stimulating if they are a true outgrowth of the purposes to be expressed and of the difficulties involved and overcome. The history of the church is measured by centuries. Its progress is guided by long experience, its advancement into the future is a prophesy of its past. Then, too, St. Joseph's church is of the Jesuit Order and the Jesuit Order is the militant branch and might appropriately appraise the vital elements of the more modern and advanced.

The plan is a true Roman cross of the earlier form wherein the transept is composed of two chapels with lower ceilings, one adjoining the nave on either side. By thus lowering the ceilings of the transept chapels below the ceiling of the nave, the length of the body of the church is given a powerful and uninterupted sweep. Of the several Orders of the church the Jesuit Order is one that stresses preaching in its ritual, and therefore better auditorium conditions are required. This adds to the difficulty of economical planning by requiring that piers be kept outside the lines of vision.

The church is built from street to street and extends over an embankment thirty-three feet high. The apse mounts up from the level of the lower street while the entrance and tower are approached from the higher level. This embankment was both a trial and a challenge and could either wreck the utility of the composition or add

EXTERIOR SANCTUARY END, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

A. H. Albertson, Architect; Jos. Wilson, Paul Richardson, Associates

to its strength and composure. The necessity of solving the difficulty of the hillside site has at least given individuality to the impressive effect that comes from mounting architectural masses. The aspiring tower adjoining the narthex is another mass element serving to balance the increased volume of the far end of the church which springs from the level of the street below.

The church is a reinforced concrete structure from the foundations to the top of the tower—walls, floors, piers, stairs, beams, roof and dome—all one homogeneous material hardened into a monolithic mass. The exterior and interior surfaces were left as they came from the concrete forms. The walls show the horizontal marks left by the joints between the form boards. There is no exterior ornament except that of the terra cotta trim sparsely used—such as pier caps, gable copings, and entrance lintels, all of a monotone similar to the concrete. The Verde antique of the copper roofs and gutters and of the iron work is the contrasting color for the main walls.

SIDE ENTRANCE, CONCRETE SURFACES, TERRA COTTA LINTEL, COPPER DOORS, ST. JOSEPH'S CHURCH

There is no veneer of brick, stone or plaster applied to any of the surfaces either outside or inside. The beams, the piers, the window jambs and even the pulpit and the reveals about the altars show not only the joints and ridges between the boards but the grain of the wood and the usual evidences of workmanship. Aside from requiring good form lumber carefully placed horizontally, no effort was made either to overcome or to enhance the natural marks of the form boards. The smooth sides of the boards were placed inward and when removed even though untreated none of the cement adhered to mar the concrete surfaces.

Consideration was given to possible condensation on the inside walls. Due to the relatively mild local temperatures they were made of solid concrete 12 inches thick with no furring space inside or outside, and no furring material applied, with the result that to date there has been no condensation.

For dampproofing purposes an integral waterproofing material was used in the concrete and a coat of dampproofing applied outside. Before the coat was applied all indications of gravel pockets or stop-joint defects were chiseled out and recemented. The dampproofing material carrying a light tan stone color, was then brushed on thickly and ground in with a revolving carborundum wheel under hand pressure. This rubbing was neither sufficient nor was it intended to remove the horizontal lines of the form marks.

Due to the fact that the structure is over 200 feet long and of monolithic construction, the problem of shrinkage due to long aging called for the most careful calculation and judgment in the proportioning and

adjustment of the materials of the reinforced concrete. This question was one of major concern. Concealed expansion joints were provided at certain critical places through the concrete but not through the steel so that possible aging cracks would be controlled. The roof slab may be a source of trouble from expansion and contraction due doubtless to the direct rays of the sun. Accordingly, roof insulation was cemented directly on the concrete before the roofing was placed. This would also guard against inside condensation.

Careful calculations of the acoustics resulted in the use of acoustical felt over the entire ceiling but none elsewhere was adjudged necessary. All the interior wall surfaces are exposed concrete. There is no floor covering. The choir, balcony, organ loft and organ console are placed over the entrance vestibule and provision is also made for an echo organ in the apse adjoining the main altar. The floor of the nave slopes gently, almost imperceptibly, from the narthex to the transept and thereby strengthens the carrying power of the spoken word. The acoustical results—the even volume and tonal qualities are generally adjudged excellent and pleasing.

The interior of the church is religiously severe. Except for the necessary organ grilles, there is not a trace of modeled architectural ornament either incised or in relief expressed by any of the masonry surfaces or masses, whether walls, ceilings, beams or piers. There is not a curved line or surface, not a molding, decorated or plain, throughout the church. Character and quality were sought by the use of proportion, color and light, by the influence of lines, the relation of surfaces, the relative values of voids and masses. Color is introduced by the large brilliant altar mosaics of glass made in New York and Germany, by the three rich solid marble altars, by the fourteen Stations of the Cross made of painted and fired metallic glass in archaic design, by the altar railing of marble and ornamental iron, the great wrought iron grille separating the baptistry, and the gem-like, hand-made gold and bronze tabernacle. When the deep, subdued and colorful stained glass like that now in the lantern over the transept is finally given its place in the main windows, the warmth and religious atmosphere will be enriched and the original concept more nearly perfected.

As an over all background to relieve its cold grey tone, warmth of color was introduced by treatment of the natural concrete surfaces. The shade used is a faintly rusty and neutral wine color with a suggestion of tarnished silver underneath. The color is not heavy or insistent enough to eliminate the natural markings or masonry character of the exposed concrete surfaces.

DETAILS, FRONT OF CHURCH, SHOWING CONCRETE TEXTURE SURFACE AND TERRA COTTA LINTEL

It was the purpose to retain the strong character of the concrete in order to maintain a sense of old stone masonry and the strength and security that masonry gives.

The ceiling color is quite similar to the side walls. The cement floor is slightly toned and scored in simple manner. Just enough dull rose coloring was added to kill the grey. The ceiling beams are somewhat darker than the ceiling and carry dull hand painted ornaments at the center and at the ends. The soffits of the side aisle arches, the faces of the four main piers at the crossing, the pulpit and the dome are the only other similarly treated surfaces. The body of the church is plain except as modified by the horizontal ridges made by the forms and by the pitted and subdued rusty effect produced by the roughness of the concrete and the stained and glazed paint treatment.

After the practical and ecclesiastical necessities of the church were tentatively allocated by the arrangement of the plan then the qualities of religious appeal desired of the structure were appraised and somehow made to emerge from the domain of the mind to the realm of form and substance. A church is complete only when the religious functions for which it was designed are in progress and the communicants are at worship, that is, the structure is an enclosing and protecting background and retreat and should be so conceived as to superinduce that worshipful and psychological frame of mind wherein, undisturbed by the outerworld, abides the peace that passeth all understanding. The church structure is not designed for itself alone. Vision and imagination must first conceive the emotional elements of worship—the religious, the ritualistic, the symbolic and the liturgical—unified in a living body of spiritual aspect, and thereafter mould about it fitting architectural forms in harmonious shades and tones.

This is the philosophy of the design of the church. It is completed and now belongs to those who pass by and to those who enter. How well it fulfills its concept and its purpose rests with them to appraise.

Photo by Depue, Morgan & Co., Inc.

MAIN ENTRANCE, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

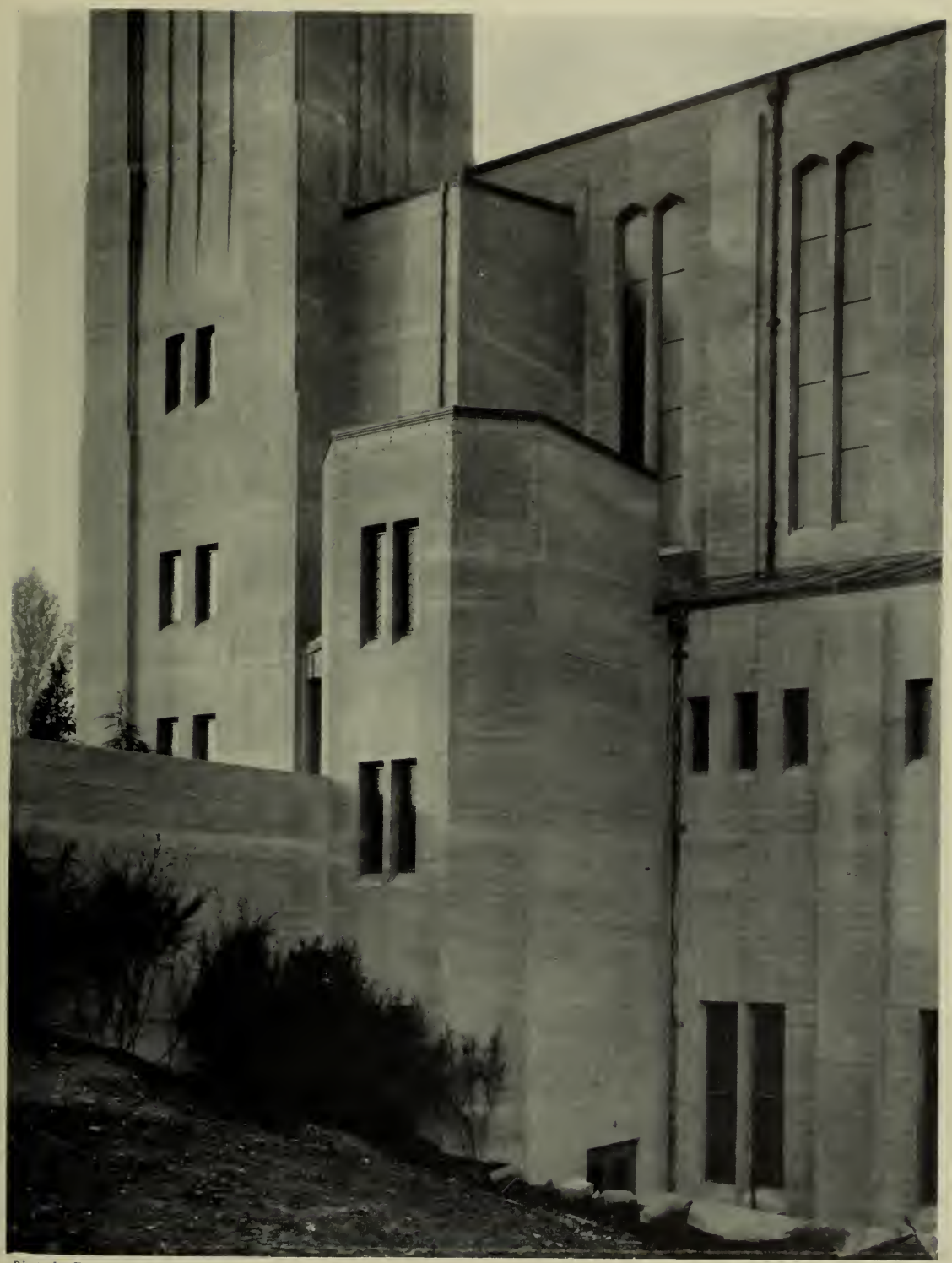


Photo by Depue, Mcrgan & Co., Inc.

DETAIL STAIR TOWER AND MAIN TOWER, ST. JOSEPH'S CHURCH, SEATTLE

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

GENERAL VIEW OF NAVE, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

Photo by Depue, Morgan & Co., Inc.

INTERIOR WITH CLOSE-UP OF PULPIT, ST. JOSEPH'S CHURCH, SEATTLE

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

Photo by Depue, Morgan & Co., Inc.

PULPIT AND MAIN ALTAR, ST. JOSEPH'S CHURCH, SEATTLE

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

Photo by Depue, Morgan & Co., Inc.

SIDE AISLE, SHOWING SOFFIT ORNAMENT, ST. JOSEPH'S CHURCH

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

Photo by Depue, Morgan & Co., Inc.

DETAIL, BAPTISTRY GRILLE, ST. JOSEPH'S CHURCH, SEATTLE, WASHINGTON

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

Photo by Jonnes and Warner

EXCHANGE BUILDING, SEATTLE, WASHINGTON

JOHN GRAHAM, ARCHITECT

THE EXCHANGE BUILDING, SEATTLE

by HORACE L. BUSHNELL

THE design of the Exchange Building, Seattle, Washington, originated in the decision of its owners, The United Pacific Realty and Investment Corporation, to construct a major office building which would also furnish quarters for the Seattle Stock Exchange, the Seattle Curb Exchange, and several similar organizations. The building was opened to occupancy less than a year ago.

The site consists of an L-shaped area having 120 feet frontage on First Avenue, 235 feet frontage on Marion Street, and 60 feet frontage on Second Avenue. It also has, in a manner characteristic of much important Seattle real estate, 42 feet difference in elevation between the First Avenue and Second Avenue street levels.

In the financial section of Seattle, in the heart of which the Exchange Building is located, it is the north and south avenues which have easy grades and thereby have become the important traffic thoroughfares. In the case of the Exchange Building, it is from First Avenue and Second Avenue that the main access to the building obtains, thus establishing the first and fourth floor levels. From Marion Street entrance is had to the second floor upon which the various exchanges are located. The design also provides a direct connection from Marion Street to the third floor.

The accommodations for the various exchanges required a large trading room or "pit." This room is located on the First Avenue side of the building and was made 68 feet by 76 feet in plan. The ceiling height, which such size of room naturally demands, was obtained by the elimination of the third floor, which at its termination constitutes the visitors' gallery which practically encircles the "pit". The ceiling of the "pit" is thus placed at the bottom of the fourth floor.

Space at street level on all frontages was naturally assigned to stores and shops. Additional to these are certain interior stores and shops on the first and fourth floors, fronting on the spacious elevator lobbies. Due to the difference in First and Second Avenue levels considerable use of the building's ample elevator service is made by the general public in going from one avenue to the other. These lobby areas thereby possess exceptional and unusual rental value.

Above the fourth floor the building is devoted entirely to normal office occupancy. As previously stated the building is L-shaped, the longer leg of the L extending 235 feet on Marion Street; the shorter leg 120 feet on First Avenue. These legs are 60 feet in width. Except for space assigned to the battery of 8 passenger elevators which are arranged in a flat circular arc on the inner property line contiguous to the Bank of California, the entire exterior area of the typical floor is devoted to office occupancy. The normal unit of space has a depth of 24′-6″ and breadth of 19′-6″. The interior area, particularly that in front of the elevators, as in every building, lacks the natural illumination of daylight and consequently is space of least value. It was felt that the generous use of this space for corridors and elevator lobbies would enhance the attractiveness and desirability of the offices served by them. Consequently, the

Photo by Depue, Morgan Co., Inc.

SECOND AVENUE FRONT, EXCHANGE BUILDING, SEATTLE

JOHN GRAHAM, ARCHITECT

corridors were made 7 feet wide, offsetting to 12 feet near the elevator lobbies and at the elevators further widening on one side, due to the curvature of the elevator bank, to a maximum width of 25 feet. On the other hand, exceptionally fine light is obtained at the ends of the building, windows occurring on three sides in the floor width of 60 feet. By shortening the normal corridor length and removing partitions, large areas of this choice space of any desired size may be furnished to tenants.

The building is steam heated from its own plant. Two 360 h. p. low pressure oil burning boilers supply steam for the differential heating system. The ventilating system supplies and distributes 60,000 cubic feet per minute of washed and filtered air, the temperature of which is regulated and controlled. A curtain system of sprinklers protects the inner property line windows which are subject to fire hazard from adjoining buildings and permits the use of clear glass in them. The elevators are of the signal control type, with speed of 800 feet per minute. Rest rooms and toilets for women and men are located on the 12th and 21st floors respectively.

The architectural design, as the accompanying illustrations show, is of modern, vertical-line, set-back character. The entire exterior, with the exception of the end of the First Avenue wing where a future extension is planned, is of cast Romanite stone. It is light buff in color with surfaces smooth rubbed and honed, except the decorative panels. At the street levels the entrances and elevator lobbies are faced with jet marble and have ceilings of diapered gold.

The "pit" of the Stock Exchange required a maximum of clear space and columns of minimum size. A row of three columns, coming down through the upper stories of the building, was consequently terminated at the fourth floor, the three columns being seated upon heavy built-up steel girders which in turn were carried on steel columns extending down through the lower stories to their footings. At the fourth floor and at the various lower floors steel beams, perpendicular to these main girders, connect the steel bents and also frame into the adjacent reinforced concrete columns. With the exception of this construction the building is entirely of reinforced concrete.

The floors are of slab, beam, and girder layout. The beams, 15″x15″ in overall size, are about 9 feet 6 inches on centers. The floor slabs spanning between them are 3½″ thick. All concrete is 1-2¼-3¾ mix except the columns in the lower stories which are of 1-1-2 concrete with 6% of vertical reinforcement, spiralled. The Seattle building code assigns a strength of 2,900 pounds per square inch to this column concrete, although test cylinders averaged about 4,000 pounds per square inch. The average column in this building receives the load of 380 square feet of tributary floor, per story. It is 34 inches square in size in the basement below the First Avenue floor, and is 30 inches square in the fourth story, which is the Second Avenue level. The column of maximum size carries 474 square feet of floor per story; is 37 inches square in the basement and 34 inches square in the fourth story. They all diminish in size in the upper stories. While smaller columns would of course have been desirable, the saving of 2 or 3 square feet of floor area adjacent to each of the interior columns did not warrant any substantial increase in construction costs. The architectural layout was studied to bring the columns in line with partitions or to otherwise render them inconspicuous.

The building contains 4,554,000 cubic feet, has 378,000 square feet of floor area, and from First Avenue street level rises 277 feet 3½″ to the top of the highest parapet. It is, therefore, one of the tallest buildings of reinforced concrete in the country.

Photo by Pierson

DETAIL OF SECOND AVENUE ENTRANCE, EXCHANGE BUILDING, SEATTLE

JOHN GRAHAM, ARCHITECT

Photo by Chapin-Bowen, Inc.

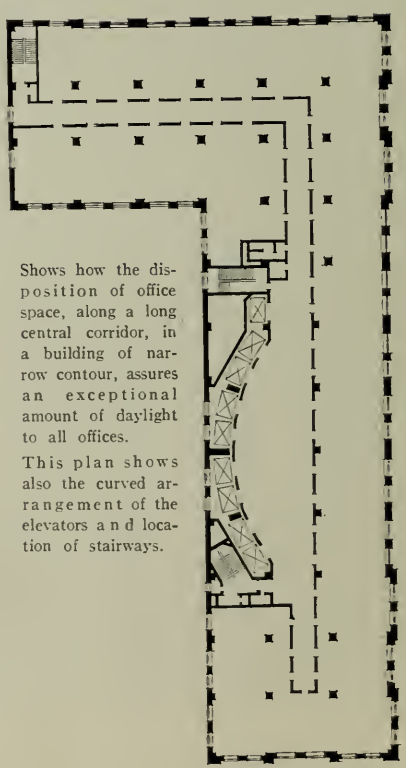
DETAIL OF ELEVATOR DOOR, EXCHANGE BUILDING, SEATTLE

JOHN GRAHAM, ARCHITECT

Photo by Chapin-Bowen, Inc.

FOURTH FLOOR ELEVATOR LOBBY, EXCHANGE BUILDING, SEATTLE
John Graham, Architect

MARION STREET ENTRANCE, EXCHANGE BUILDING, SEATTLE, WASHINGTON



Shows how the disposition of office space, along a long central corridor, in a building of narrow contour, assures an exceptional amount of daylight to all offices.

This plan shows also the curved arrangement of the elevators and location of stairways.

TYPICAL PLAN, EXCHANGE BUILDING, SEATTLE, WASHINGTON

Photo by Walter P. Miller

WASHINGTON ATHLETIC CLUB BUILDING, SEATTLE, WASHINGTON

SHERWOOD D. FORD, ARCHITECT

CORNER OF
DINING ROOM
WASHINGTON
ATHLETIC CLUB
BUILDING
SEATTLE, WASHINGTON
Sherwood D. Ford,
Architect

LADIES' BRIDGE
ROOM
WASHINGTON
ATHLETIC CLUB
BUILDING
SEATTLE, WASHINGTON
Sherwood D. Ford,
Architect

Photo by Depue, Morgan & Co., Inc.

ENLARGED RAINIER CLUB BUILDING, SEATTLE, WASHINGTON

BEBB AND GOULD, ARCHITECTS

RESIDENCE OF DAVID WHITCOMB, SEATTLE, WASHINGTON
THOMAS, GRAINGER AND THOMAS, ARCHITECTS

Photo by Depue, Morgan & Co., Inc.

CENTRAL BRANCH Y. M. C. A. BUILDING, SEATTLE, WASHINGTON

A. H. ALBERTSON, ARCHITECT; JOS. W. WILSON, PAUL RICHARDSON, ASSOCIATES

SAN FRANCISCO SKY-SCRAPERS WITH BAY AND MARIN HILLS IN BACKGROUND
Painting by Edward Bruce

THIS Edward Bruce painting covers some 30 square feet of wall space in the Governing Board room of the new San Francisco Stock Exchange Building. Its title might be simply "San Francisco." It shows in the foreground the towering buildings of the lower city grouped with regard to contrasting effect rather than photographic exactness, but with such faithfulness in detail that many a distinctive skyscraper may be recognized. In the background are the Marin hills, the shoreline of Richardson's Bay and the intervening waters.

Paul Dougherty, well known American artist, now residing in Carmel, saw the work of his fellow craftsman and made the following comment: "Edward Bruce has produced a work of singular and original beauty. Skyscrapers rise up to a central group outlined against the blue waters of the bay. The outlying neighborhoods cluster on the hills above the near shore. One senses rather than sees the myriad windows, the city's eyes; or the depth to the street levels below. It is a picture of great centralization of man's energy and will."

SOME OBSERVATIONS ON ARCHITECTURAL CONCRETE

by HOMER M. HADLEY

BETWEEN concrete in its newer architectural forms and concrete in its older purely structural uses, a basic difference exists. This basic difference is a difference in visibility. Structural concrete has almost always been covered and concealed. Architectural concrete is in plain sight, is exposed to view and receives the attention, whether it be indifferent or critical, of all beholders. It is out in the open and can be seen at any time by any one. It is, therefore, in the position where not only it ought to be good but where "it has got to be good." It must satisfactorily pass not alone the test of human scrutiny but, in the more severe climates, it must also withstand the analysis of the weathering processes, intent on its destruction. "It has got to be good," to a degree and extent not hitherto generally required of building concrete.

This need to be thoroughly good is not, of course, a thing of recent origin, only contemporaneous with the advent of architectural concrete. The need has always existed and in general it has been satisfactorily met. Yet everyone has occasionally seen concrete buildings where the need has not been met and where various imperfections and defects stand in evidence. The avoidance of ragged, irregular pour lines, "gravel pockets," segregations, careless carpentry in form making, etc., become of paramount importance here.

Editor's Note — Mr. Hadley is Regional Structural Engineer of the Portland Cement Association, with headquarters in Seattle, Washington.

It is not a question of strength that concerns the architectural use of concrete. Built in conformity with current practices and for vertical loads, concrete has strength and strength to spare. Probably no other forms of construction have so much. When leaking gas accumulated in the fifth story of the Garment Capitol in Los Angeles a few months ago and was exploded by an early morning cigarette, the fifth story sash were blown out with a blast which knocked down pedestrians on the street outside and broke windows nearly a quarter of a mile away. Yet the concrete frame of the building was little the worse for the experience. Some cracks of fair size had developed in the sixth floor and some fewer and smaller ones had appeared in the fifth floor. Test loads of 250 pounds per square feet, double the load for which the building had been designed, were applied over full panels. These test loads produced deflections of 1/700 of the span and permission for renewed occupancy. The concrete here was of good quality, and well designed. But even the poorest concrete develops surprising strength.

What is of major importance with architectural concrete is that it everywhere be of a constant uniform quality and of such quality as will withstand the penetration of moisture and the destructive action of the elements. These few easy words specify a condition the fulfillment of which requires care, attention, co-operation, and sustained effort. Concrete is not merely a product of its raw materials; it incorporates the contractor's workmanship, the engineer's ideas

of proportions and manufacture; the architect's conceptions of final shapes and forms. All of these components find expression in the completed result and they must all be of reasonably good quality — materials, workmanship, and ideas—if satisfaction in the final finished structure is to be obtained. A concrete whose strength and plasticity are assured by sufficient cement, properly graded aggregates—watch your sand—and a controlled quantity of water must, by the exercise of the contractor's full, good workmanship and care, be placed in forms built to produce desired surfaces and textures. Shape and size of the forms must be adequate to receive fresh plastic concrete and must also be adequate to permit the forms' subsequent removal, which operation again demands care and attention.

There is nothing essentially new or novel in the production of architectural concrete. What is required is simply more care, more sustained and painstaking effort, more thought, than building concrete has frequently received in the past. Vague and nebulous desires and wishes for a good job have to be replaced with a definite determination to have it. Will and resolution have a pronounced effect upon concrete quality.

DETAIL INTERNATIONAL HOUSE,
UNIVERSITY OF CALIFORNIA, BERKELEY
George W. Kelham, Architect

Two major types of surfaces are employed: the form-marked surface which retains the impress of the forms and the original surface film of cement; the exposed aggregate surface from which the original film of cement has been removed by one of several possible methods. Of these major types the first named has been used far more extensively along the Pacific Coast than has the second.

A most interesting intermediate type of surface appears in the walls of Grace Cathedral, San Francisco, where the form-contact surface has been removed by bush-hammering to a slight depth. Here, although the aggregate is exposed, the lines of the forms are faintly suggested or are indicated in many places by an actual difference in concrete structure resulting from the escape and loss of water through the horizontal joints in the forms. At these lines the concrete is of lower water-cement ratio than between them and this difference is revealed by an appreciable difference in appearance. The faint lining of the exposed aggregate surface is very pleasing; thereby a uniform sameness of appearance which in large areas is not wholly satisfactory is escaped and avoided.

Architectural concrete has had its great development and use in California. Consideration of its use elsewhere naturally raises the question of its suitability to exposure in climates which are not to be called "Californian." Would sudden changing and rigorous extremes of temperature and moisture break down and destroy concrete so left exposed?

The answer to this question is not to be sought in mere emphatic pronouncements and asservations, but it is to be found in the concrete surfaces which in every locality in the country have for five, ten, or twenty years been subjected to the very test in question. In retaining walls, abutments, pavements, rear or side walls of factories and other building, concrete of varying character and qualities has been exposed to

all variations of winter and summer weather. Has sound good concrete failed and disintegrated or has it not? If it is thus proven that exposed concrete of sound good quality will not endure, then it is unwise to attempt more of it. If, on the other hand, it appears that concrete surfaces of proper quality have successfully withstood past weather, then, despite dire predictions and gloomy forebodings to the contrary, it can be concluded they will successfully withstand future weather. What nature has demonstrated can safely be accepted as fact because, quite as Carlyle said, "Nature is true and not a lie."

The concrete of the past years is not referred to with any fatuous belief that it will be miraculously transformed for inspection purposes or will appear otherwise than as it is. There has been poor concrete made in the past. It can be made again — now. But everywhere is to be found so much sound good concrete, so resistant, so unaffected by years of climatic exposure, that successful performance of concrete exteriors manifestly is conditioned on an impermeable uniform structure of the concrete rather than on surface treatments, patent processes, or potent charms. Therefore impermeability and uniformity of structure are to be desired above all other properties. If they are obtained the endurance question is answered.

Impermeability and uniformity in concrete are not consistent with low cement content, poorly graded, harsh-working aggregates, soupy, sloppy mixes, or careless placement. Between these things and satisfactory results there exists the same irreconcilable differences, the same impasse of diametrically opposed forces that occur when a man tries to lift himself by his bootstraps. The desire to rise and to be lifted is neutralized by the means selected for accomplishment and consummation. The algebraic sum is zero. There is widespread recognition of this bootstrap fact. Similar recognition of the analogous difficulties that may arise in concrete making, unless they are avoided, is greatly to be wished for.

Yet another important set of questions respecting the architectural uses of concrete are the fundamental ones regarding its existence: Why do we have such uses; what has been the reason for their development? Much could be written in answer to these questions, but one cogent answer is low cost, economy. All natural phenomena proceed with a minimum expenditure of energy; nature does not go around Robin Hood's barn to arrive at a given destination. Human activity likewise tends to take place with a minimum expenditure of energy, particularly if the human energy is in that stored-up form commonly called "money." Consequently if desired architectural forms, appearances and effects can be satisfactorily obtained with a lesser expenditure of money by one means than by another, the conservation-of-energy law and economic determinism will work wonders in development. Additional to and quite apart from such considerations, the unquestionably fine, impressive, dignified and beautiful results achieved with it demonstrate concrete's suitability and fitness for architectural use.

DETAIL OF BUTTRESS, GRACE CATHEDRAL CHAPEL, SAN FRANCISCO
Lewis P. Hobart, Architect

EARLY USE OF ARCHITECTURAL CONCRETE AT GOVERNMENT LOCKS, BALLARD

by CARL GOULD, Architect

IN the summer of 1914 Major Cavanaugh, who was then in charge of the designing of the Ballard, U. S. Government Locks in Washington State, obtained the services of Bebb & Gould, Architects, in planning the ground layout and designing all of the buildings and structures other than the mechanical and engineering features.

This work included the main operating house, five secondary operating houses, transformer building, warehouses, superintendent's cottage, light standards, housing for dam machinery, and planting of trees and shrubs.

With the exception of the superintendent's cottage all structures were designed to be built integrally of reinforced concrete, that is to say, the outside surface finish was simply an intrinsic part of the structural wall.

The main light standards are 34 feet in height and have an arm spread of 12 feet. They were cast in a horizontal position (except the base which was constructed in place) and erected when sufficiently cured. The formwork, under the supervision of A. W. Sargent, was executed with great accuracy and reproduced the quality of the design in every detail. The forms used were of carefully selected fir lumber, those for mouldings, etc., being rubbed with oil. The standards are of hollow core type 13″ diam. at the lower end and tapering to 3″ at the top.

In pouring the two and one-half story operating house care was taken in making the process as continuous as possible to avoid surface disfiguration. Although simple in design, considerable ornamental detail, columns, mouldings, parapets, window frame moulds, etc., were executed with success from moulded patterns.

GATE HOUSE, BALLARD, WASHINGTON
Bebb and Gould, Architects

To avoid condensation on the interior of the walls of the main operating house one coat of heavy asphalt waterproof paint was applied, then 2″ hollow tile and plaster. No waterproofing treatment was used on the interior of the smaller operating houses. The roof of the main operating house is covered with Ludowici clay tile. The roofs of

OPERATING HOUSE, U. S. GOVERNMENT LOCKS, BALLARD, WASHINGTON
Bebb and Gould, Architects

the smaller operating houses are of concrete cast homeogenously with the walls.

The proportions of mixtures used for concrete was 1-2-4 for walls and considerably richer for the roof. Hydrated lime was used also in walls and roofs, and no leakage or moistening of walls or ceilings has occurred.

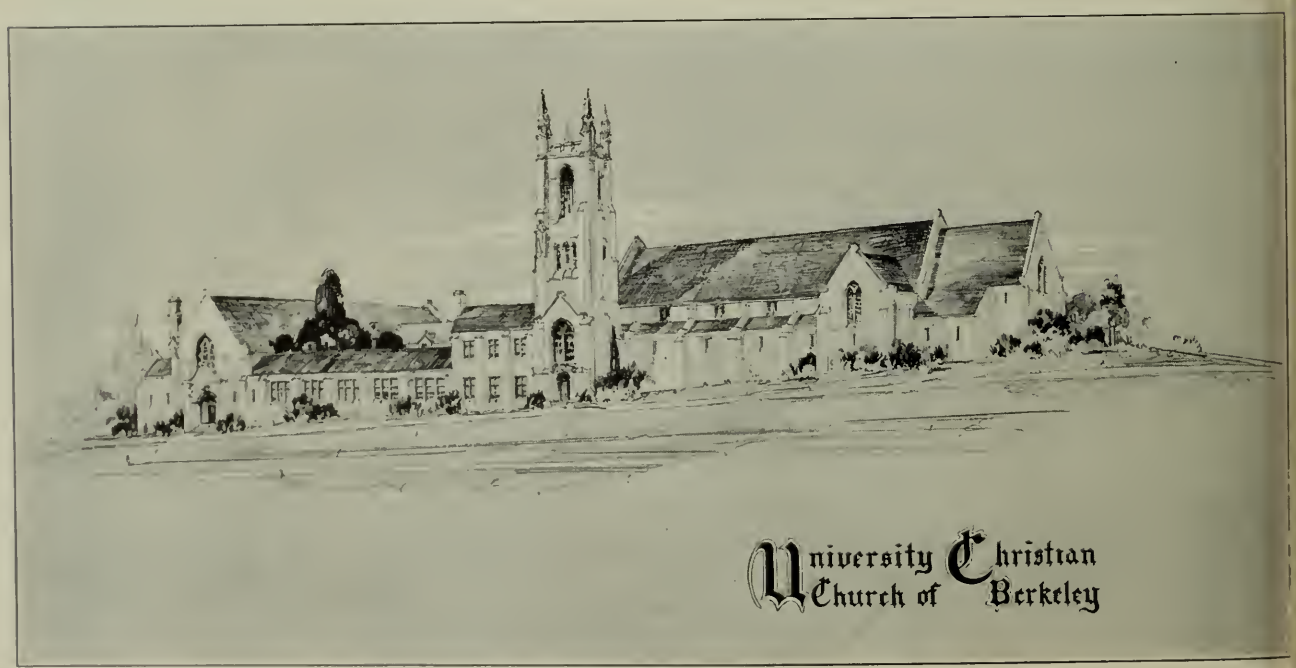
The inspection under Major Cavanaugh and Mr. Sargent's direction of all pourings was such that there developed few, if any, gravel pockets, and the walls as they now stand are evidence of the excellence of this method of construction under intelligent supervision.

In order to carry out more completely the desired architectural effect, surfaces were broken into panels by exposing the aggregate by means of bush hammering and the use of wire brushes after the cement had attained the desired set.

It was Major Cavanaugh's desire, in discussing the structural types to be used, to create a wall which would not only serve its purpose without repair for a period as long as the locks themselves might endure, but to express in their architecture a homeogenity of effect in keeping with the quality of the concrete which the locks and their massive foundations were built.

"ACCURACY", ONE OF FOUR SYMBOLICAL PANELS IN ENTRANCE LOBBY OF LOS ANGELES STOCK EXCHANGE.

Samuel E. Lunden, Architect.
John Parkinson and
Donald B. Parkinson,
Consulting Architects.



PERSPECTIVE OF ORIGINAL SCHEME, UNIVERSITY CHRISTIAN CHURCH, BERKELEY, CALIFORNIA
W. H. Ratcliff, Jr., Architect

RHYTHM

by WM. LEE WOLLETT, Architect

ARCHITECTURE is but one minute phase of human experience in which may be seen the imprint of the universal choir master—rhythm.

Once on the seashore when a stiff breeze was ruling off the beach into little ridges, I saw in the sand what appeared to be the partly modeled form of a giant bird's wing. The graven image was about seven feet long. The depth of the etching of feathered parts about one-quarter of an inch. The briskly moving air had upon impact with the shelving beach, broken into vortices, and as a result there were carved in the sand, syncopated over-lapping feather-like forms—forms similar to those found in the wing of the soaring type of bird. The lift and torque one sees so interestingly developed in the wing feathers of this type of bird were well defined. These feathered forms lay in regular rows, each feather properly lapped over the other and the rows varied in length. The carved area exhibited not only the general but the particular characteristics of a wing! The imagination takes flight back into the caverns of time — when our planatory system was merely a partly formed spiral of star dust. How much of the carving out of the universe has been due to the vortex?

Innumerable examples of under-sea growth, both animal and plant life, exhibit a tendency to repetition of geometric forms. The fish and shell forms especially have the appearance of having been carved by the vortex. The spiral is commonest of all sea forms and appears also in the animal and plant life of the land in various ways, more often as a form of growth internally. Note the hoof, hair and horns of various animals, etc. The spiral of Leonardo De Vinci, symbolizes for the artist perhaps the deepest, the most subtle and the most significant peep into the available mysteries of creation. And so since the Creator of the universe deigned to utilize the mechanical agency of the vortex of which the spiral is the projection, why should not man place this tool in his chest?

The vortex may be considered a form of rhythm. In proportion as we delve in primal forms and cosmic arraignments such as we see in plant and animal life — microscopic and atomic relations, we notice that the Master Artist was not only a mathematician, but a rythmatician as well.

Rhythm, solace for the ear and eye! Her voice is heard in the conch shell by Southern seas, in the icy rattling of the pine needles of the North, and in the soft whirr of butterflies on the desert.

By the token of recurrence even the rocks, admantine and cold, lie in rhythmic layers. These layers are but the echo of endless repeat of waves. They are the graven image of rhythm on the leaves of nature's book. Even the atoms out of which the tiniest fraction of our physical universe is created we have noted, are arraigned with mathematical precision in patterns and design, and forms which exhibit cadences of a myriad diversity of rhythm. In the long aftermath when the universe is out for recess, making ready for a new planetary epoch—there will still be the whole heart beat of God sending forth law, steadily, "rhythmically."

The place of numbers, another name for rhythm, in the cosmos of art is real, definite and intriguing. The spiral of Leonardo De Vinci already mentioned is a phase of this rhythm as are also the conic sections, permutations, combinations, series, etc., of our mathematical formulae. Architecture is thus for humanity the capstone of a great pyramid of experience with rhythm, the mirrored reflection of the inner-consciousness.

Hear the sound of the even chop of the woodsman, deep in the forest among the "Redwoods!" Fern fronds spiral in geometric curves and in turn wave back breezy vortices from the falling ax. Listen to the thump, thump, of the broad mallet as the shining crystal of the wood carver's steel eats into the creamy crispness of the white pine. Even the shavings are beautiful examples of spirals. Are they not often sufficiently personal as to be easily differentiated from another carver's chips? From the curving flames which t h e carver's tool cleaves from the graven oak — from the resinous tones of the singing violin—from the flaxen strands that hum in tense vibration as tons of steel are towered aloft, there comes ever to man the music of motion, footsteps of time; the soft pining and gurgling of the never silent stream of rhythm. To catch some pleasing chord in the universal rhythm, to cogitate and plan and finally to enshrine this rhythm for all time in the Cathedral rock is the scope of the architect.

The obvious kinship of certain architectural forms to the spiral is of itself sufficient evidence that mathematics play a formidable part in the art of architecture. But the scope of mathematics in architecture, abstract or concrete, is not confined to the spiral by any means. In fact the entire fabric of architectural construction and design is a vast complex fabric of mathematical inter-relationships, rhythm being the binder. To be explicit, a sense of rhythm in architecture is conveyed through the recurrence and syncopation of component parts. All sorts of values are included in this category, window and door openings, columns, arches, lines and planes, profiles and color values, etc. The egg-and-dart and the dentil and the flutes of the columns are examples of details which may be viewed as contributing to the rhythm of architectural composition.

In architecture the rhythm quality might be considered by some to be essentially an instrument of "decoration?" Imagine if you can a building in which there were no structural parts which reproduced themselves. Imagine a building so simple in construction that there was no mystery as to the number or arrangement of its parts, no charm to be seen in the pleasing contrasts in the structural forms and the functioning of one structural form with another. Think of an obelisk as opposed to a Greek Temple or Gothic Cathedral. U n d e r rhythm we consider ideas of unity, and its opposite, multiplicity, also phases of multiplicity; namely syncopation, recurrence, etc. Milan Cathedral is a splendid example of a maximum of both unity and multiplicity in one composition: compactness and simplicity of mass and great diversity and minutae of the parts. The idea of tempo is a direct implication of multiplicity, as it is also of all the derivities of multiplicity. What would you think if asked to compare the tempo of the last mentioned b u i l d i n g with the tempo of the Lincoln Memorial at Washington, D. C.?

The idea of duration of time is after the sense of unity, or entity, the most definite idea we have of life. I am that I am—unity —yesterday, today and forever—time. The idea of duration, sequence, cause and effect, etc., neighboring abstract values, i d e a s closely associated with the ideas of permanence and stability and these are the basic ideas expressed in architecture. The ideas to which we have referred, i.e., duration, sequence, cause and effect, are however, complimentary and abstract values, which may be expressed in the static relationship developed in the various parts of a building. Any static relation which creates confidence has as its base an idea of duration. Stage props do not suggest that they are permanent; still the forms and colors may

stimulate the idea. The Sphinx, the obelisk, the pyramid, these forms calculated to defeat the ravages of time, have a maximum of static sobriety, stability; these forms express the abstract idea of permanence.

Ideas of syncopation, multiplicity and progression all enhance, bolster and suggest; they are the saddles upon which other ideas such as opulence, play, refinement, etc., may ride. These ideas of duration may be utilized as co-efficients of static and color values. For making clear the purpose for which the building is built, these values are indispensible. Through the details and arrangement of the parts of an architectural composition other abstract values are added to these; the whole a subtle essence of compatibility with the uses of the structure.

By syncopation we mean the regular interruption of the idea of multiplicity as expressed by repetition, i.e., a row of dentils interrupted at intervals by a bracket as in the Doric order. A definite sense of duration—time occupied, of past and future as well as space occupied and traversed is thus indicated. We have here the idea of limiting as well as expanding time values.

The sense of rhythm obtained through syncopation is more complex and hence more decorative than in mere progression. Versatility! Vim and life, high spots in the architectural composition, high-lights, and deep shadows in playful irregularity are vehicles or exponents of the idea of syncopation.

Syncopation is the ragtime element of architectural music; it is the regular irregularity introduced for more or less theatrical display of meter. In general, a restless tendency is expressed by this phase of rhythm and is useful often as a counter and foil for the idea of unity.

The chief use of conventional architectural egg-and-dart, leaf mould, dentil, ornament, etc., is to create the idea of intricacy, of preciousness, of elegance, because labored or costly. The idea of syncopation is naturally only one of the tools for creating these effects.

Through the multiplication of conventional architectural forms the associated ideas of progression and syncopation are easily made possible. The ideas of duplication or duality and parallelism both of which indicate function are similar tools of thought for the architect, and require a separate treatment, i.e., a chapter will be devoted to the subject of the number two and its relationship to the idea of function. But columns and column caps and egg-and-dart ornaments and dentils used in haphazard relations do not necessarily signify rhythm, any more than a lead pencil and a piece of paper signify a beautiful line, or a basket of fruit a centerpiece. The rhythm in a building must come out of the creative intelligent mind; the arrangement of the engineering features in close harmony with all color values; and these composed with the practical uses of the structure and beyond all else with the authentic requirements of the inherent architectural message. The profile line of mouldings and of the masses are equally significant and must be in harmony with the dominant rhythm of the building.

In drawing a fine line meant to express a particular sense, or to be in harmony with certain ideas, the co-ordinates of intellect, sense perception and mechanical co-ordination all come into play. And the line if truly drawn, has an equation. In drawing a line the required rhythm results when the contributing forces work in harmony; i.e., when the intellect is in perfect couple with the sense desire — the idea of unity is extended to include the idea of multiplicity, etc., and all ideas are in correspondence and fused in the expression of the abstract idea. This conception of the correspondence of the elements involved in the formation of a mere line will appear to some to be imaginative. The lines in nature forms are created in this manner, i. e., created out of the primal forces functioning the universe.

Without some such idea back of composition and design in architecture columns become useless trunks; details tiresome lumps. One remembers his first introduction to architecture, an "egg-and-dart" and "dentil" seemed to be useless, immaterial and fussy, they bored and annoyed and seemed the incarnation of the inane (almost every architect has felt this sometimes dur-

ing his experience as a designer.) So they are, and so is all detail of ornament, and all form and proportion and precedent. Without the sense of a dominant rhythm with which to encompass an idea of life and make possible the appropriate expression there could be no co-ordination and correspondence in the myriad parts of a building.

Without these nice adjustments and discriminations, architecture must be regarded not so much an art in the highest sense, as a craft. An art is differentiated from the craft by its capacity to interpret abstract thought. When architectural proportions and arrangements or composition are viewed merely as elements in a picture or as practical engineering problems unrelated to aesthetics, we have merely a craft.

When one sees rows of dentils or brackets in a cornice, the first impression is that there are a good many of them, there are far too many to count, so many that the idea of infinity is there.

The sense of duration is closely allied to that of infinity. Duration is the idea of the continuity and oneness of time. From stability and unity we obtain ideas of permanence, (with apologies to the essence of material of course). The character of the material used in architecture limits, amplifies and moulds the dominant idea as expressed in the form, even as do the color qualities. Thus a cathedral cut out of wood, would be different from one built of stone, regardless of the color values.

From the sense of duration as we have said, we obtain the idea of syncopation and recurrence. The staccatto-like nature of thought and the electric zig-zag lightning-like values of line and form used to express this attribute of thought are part of the function of architectural forms. Through ideas of stability and permanence we obtain indirectly the idea of the future, eternity and the eternal, i.e., the Sphinx. We have in these and kindred abstract values the object for which architecture exists.

Architecture is the only vehicle we know by means of which we may express certain abstract values. And architecture is in its abstract message, beyond all other forms of art—unique, scientific, precise as well as powerful. A building therefore, is so much utility, as indicating its functional value; so much permanence as indicating the monumental or vice versa, the casual value; so much opulence and refinement, a dash of historical authenticity, a little play, some sprightly vivaciousness, combined with gravity, etc. What abstract value may not be expressed in architecture? Think of the suave grace of the Egyptian Galley!

Ruskin and his seven lamps of architecture are nothing if not an exposition of abstract values. Had Ruskin been a scientist in the modern sense, he could hardly have expressed more clearly the inner-meaning of architecture.

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MAYAN ARCHITECTURE AND ITS MODERN APPLICATION

A SHORT STORY by E. S. SOMERS, Architect

TO write of Maya history from their migratory period, covering the exodus from Europe or Asia, is to court mystery. Each writer has by his intensive study of the racial features of his subjects, their habits and customs and no less by certain features expressed in their architecture, arrived at conclusions variously conflicting. Hence, realizing the questionability of it all, the author feels it a duty he owes posterity to give the true facts pertaining to this most interesting and vexed problem as he has found them.

An aeon or so ago, whatever that is, there existed at a certain eastern well known watering place, or garden so-called, two beings wearing the proverbial fig leaf, but otherwise having been just initiated from their cave-dwelling ancestry. They begat two sons. Now Cain was proud and temperamental, an aristocrat, aspiring with his clan or political faction to dominate the world. Abel was an obstacle in the way of his ambition.

ENTRANCE DOORWAY BORDERED WITH COURSE OF MAYAN HIEROGLYPHICS

The course was easy as has been told in the history of the time. Abel was destroyed, while the latter's political adherents, obeying the first law of nature decided to take to the tall woods, their slogan being: "Go west young generation."

Arriving off the coast of Spain without finding any tall woods, they took leave on the first boat for the continent of Atlantis, a body of land lying in the middle of the Atlantic Ocean.

Today it lies submerged, while above its fertile soil floats a carpet of sea grasses often too dense for the passage of ships; it remains thus as a protest to its enforced separation from the land below. Mariners call it the Sargasso Sea.

Then it was a broad flat plain covered with tall wood—just what they were seeking — Eureka! The promised land.

Here they lived, prospered and multiplied. Forgotten was Cain, his tribes and even his religion; they had other gods, malevolent and benevolent.

Suddenly one morning they awoke to find the island was sinking, that waters had covered the land and destroyed their crops.

That was about the time Noah was having a similar experience in the east.

Finding no land upon which to stand and knowing that what goes up must

DETAIL OF CROSS-BEAM—(Note Lack of Symmetry in Maya Ornamentation)
E. S. Somers, Architect

USE OF MAYAN DETAIL FOR NUNNERY
E. S. Somers, Architect

come down, they reasoned inversely that somewhere a land must have arisen, otherwise their fair Atlantis would not have sunk. This they must seek.

Their remnant, for many had perished, thereupon following the slogan of their ancestors, embarked for the west.

The eighth morning beyond the breakers, land appeared scarcely rising above the sea, like their own fair Atlantis, but alas there was no tall woods. Fish were flopping upon either side, for the land had but just risen from the sea. They called it Yucatan. In fact, as truth of this narrative, geologists assert that Yucatan is geologically of recent origin.

Then to their amazement they discovered the foot-prints of man. How could mankind be found here? It was unbelievable—their forefathers were the first men—beside the land had just arisen from the sea.

They trailed the scent for days, subsisting upon fish and they had all but perished when hills appeared before them, then tall woods and lastly a group of men, minus the proverbial fig leaf.

The natives welcomed them to their habitations and to a great feast.

In thanksgiving they sacrificed a few of the natives to their gods. Told that other lands lay beyond, they started forth and soon arrived in the valley of Mexico.

Here to their surprise and consternation they were met by a delegation from the north, a great tribe of Asiatics who, following the Aleutian Islands to Alaska, had sojourned down the coast naming each mountain, valley and town as they passed and dedicating them to Confucius.

Then began such a mixup as the world had never known. It was America's first melting pot, red, yellow and white striving for supremacy. Had the women been other than non-combatants there never would have been a later Maya civilization.

The remnant of the three races finally got together but they could not agree.

While they were thus pondering, a bright light appeared from the mountain top which by night illuminated all the country about and they were sore afraid. A cloud of smoke appeared, finally to spread over the entire land, so that night and day was as one. There were quakes and subterranean rumblings, ashes covered the earth, the streams became dry; they could but feel their way only to fall over those who had fallen before, when suddenly a new day appeared of rain and sunshine, and when they had mourned their loss, their remaining strength in pious simplicity and homage was devoted to their several groups of gods in thanksgiving.

Then appeared before them a strange man. He said he was from the tall woods far away, and had come to lead them, but the yellows and the reds murmured for his face was white, a trick of the Caucasians they said, while the whites winked at one another.

They sent a delegation into the tall woods from whence he had said he came, far into the virgin forset. Returning they said they had found nothing against the man; also that the forests were still virgin; therefore he must be a god.

They marveled at the miracle wrought, in darkness had come light in the being of this strange man. He was deified "Quetzelcoatl" (The "Fair God" as General Lew Wallace called him in his book of that name).

Returning to their interrupted conference they finally agreed upon a three party pact, the whites to control the religious and moral activities, the yellows the political and military, and the reds the activities of burden bearer or slaves. There was but one group of dissenting votes to the latter proposition but they were in the minority. In fact, apparently so well satisfied were the latter, they have continued in a similar role ever since.

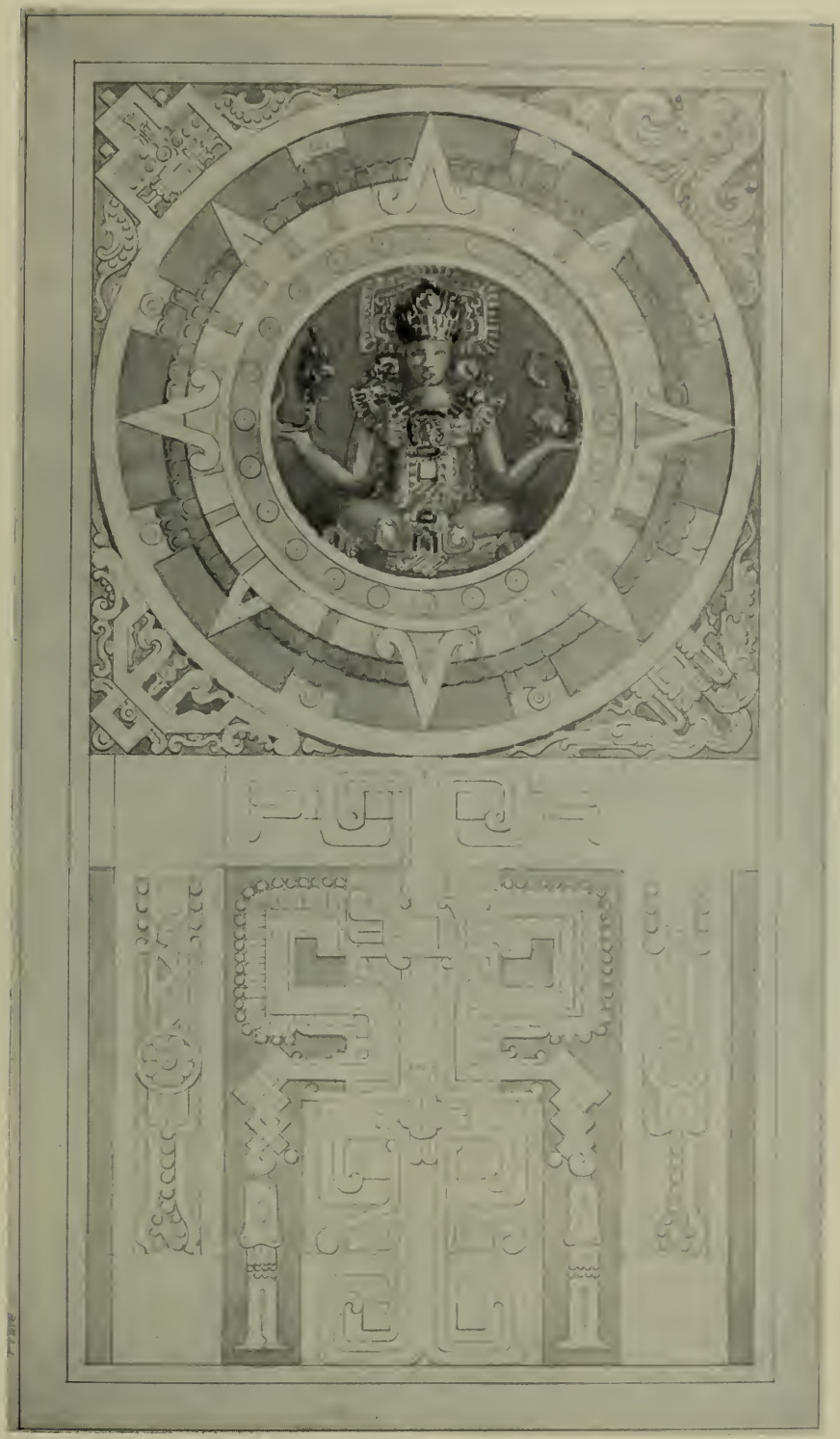
Red, yellow and white—what a foundation upon which to found a civilization.

The dark ages came and through it all there was undergoing a constant stirring of the pot, until no man knew from whence he came. Still he flourished, multiplied, responded to the call of science, architecture, mechanical and fine arts, leaving its ghostly image on the rocks of the jungles today.

Then began a rivalry for supremacy, a monopoly of privilege. Kings became gods and lords kings; the military and priest-

DETAIL OF MAYAN ORNAMENT

L. S. SOMERS, ARCHITECT



DETAIL OF MAYAN ORNAMENT

E. S. SOMERS, ARCHITECT

hood vied with each other in gorgeousness of personal display, while the arts and architecture were but a means to dignify their exalted position.

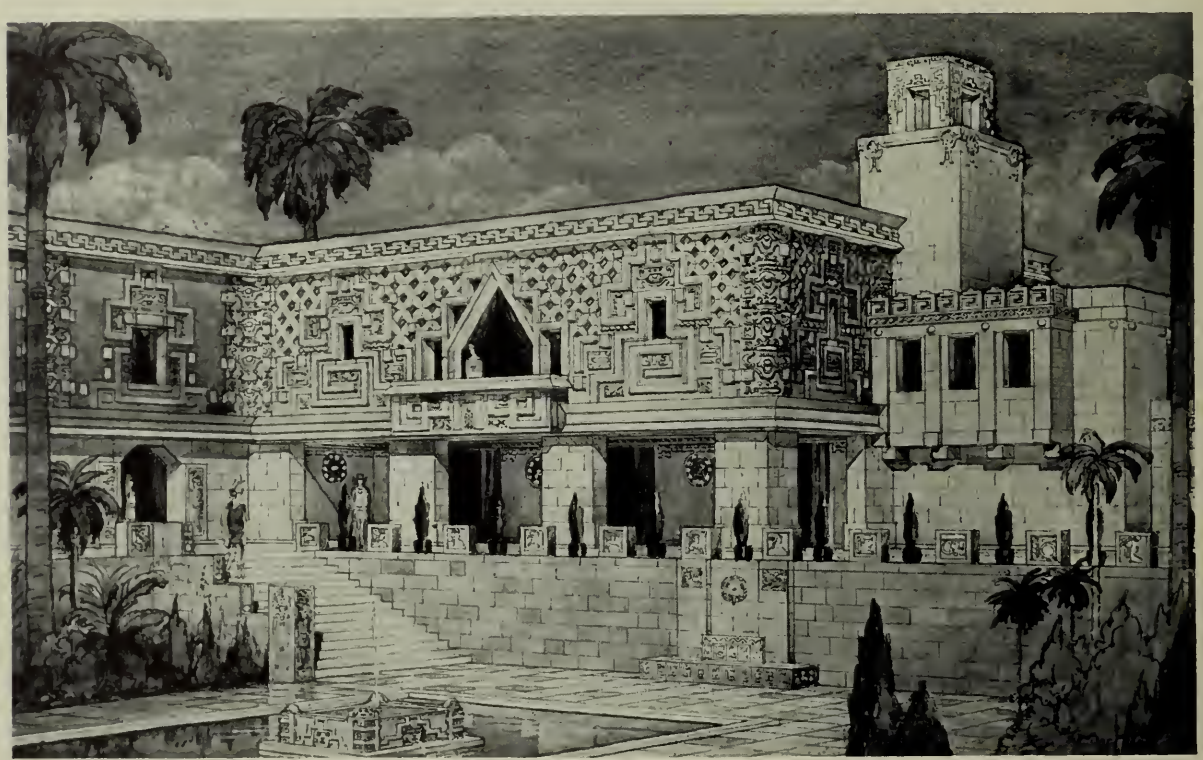
Their architecture needed no arches, vaults, domes nor trusses to span the gathering places of the multitude. Buildings were but as a pedestal around which the people might gather to look with awe upon the exalted.

Nevertheless I feel that if one may stand before these colossus of stone as we find them reflecting as they do in rich carvings the mysteries of an unknown America, and then can close one's eyes to the grotesque and seemingly absurd expressions, revolting to modern taste and refinement, there still remains much that is beautiful, harmonious, almost living, and one feels that the architecture as much as the hieroglyphic carvings tell of its people, their very thoughts and actions, weal and woe.

Thus I see it all—not a style—it is like an unfinished manuscript, rather a foundation for a style, original in its scope, uninfluenced by any outside forces.

In form the receding effect of skyline, especially the derelict style of Arizona and New Mexico, seems almost to suggest the modern skyscraper; surely no form of skyline gives so harmonious an effect upon both plains and mountain region of the southwest.

Of its details and ornament I have nothing to say, leaving it to the reader to inspect available illustrations, by George Oakley Totten, in National Geographic Magazine, etc.



APPLICATION OF MAYAN ORNAMENT FOR A CIVIC STRUCTURE

E. S. Somers, Architect

Many examples have been erected in the United States, mostly unsatisfactory, due to the following:

First—Lack of knowledge of one's subject.

Second—An effort to over-apply the principles of European architecture to this which has little in common.

Third—A lack of discrimination in the selection of historic details often revolting to public taste.

Fourth—A lack of study in the blocking out of the framework of the ornament which often calls for unsymmetrical details.

Fifth—Faulty scale or a disregard of distance from the eye, their relation to adjacent ornament and whether of exterior or interior placement.

Sixth—A too close adherence to historic colors in which dark effects may produce depression.

Seventh—A too close adherence to historic examples instead of using one's head. I do not believe the Romans lost much sleep over the belief that the world would not accept the verdict, when they decreed the Grecian must become a Roman architecture, nor do I believe the intelligences of today will bar the architecture of the Maya becoming American for like reason.

Many students of Maya architecture may think I have taken undue liberties in the perspectives and details herewith submitted, therefore let it be understood I am accepting my subject as did the Romans—not as a style, but as a foundation for such and so will continue in my future studies with limitations.

Therefore I have given no classifications as to periods, neither classic, Renaissance nor Toltec, but have taken any worthy motive, made careful study of the form and framework, then have filled the intervening space with well chosen characteristic ornament with due regard to contrasts between the richly decorated surfaces and that of the plain surfaces to which it is joined.

Especial attention should be noted to the often times lack of symmetry in characteristic ornament of the Maya.

The most characteristic features appar-

APPLICATION OF MAYAN DETAILS FOR A MODERN RESIDENCE

E. S. Somers, Architect

ent to the novice are where serpent or grotesque features are pronounced. These I eliminate altogether as revolting to public taste.

If he fears that by a too close adherence to the style there may be a lack of harmony between it and its environments, its furnishings, etc., then remember the Moors conquered Spain, bringing to its shores an architecture of their own truly beautiful, and which ever after was to influence the mother style.

Therefore I would say let your subject be Spanish or other styles developed under similar climatic condition, then the Maya instead of Moorish to be the moulding influence, gradually to increase that influence until the Maya shall predominate.

The hieroglyphics, often quite decorative, though meaning nothing to us as a language, possess features that if used with discrimination add charm to a composition.

The entrance doorway is bordered with a course of hieroglyphics. A well known archeologist has deciphered them as reading, "Welcome who enter here." While giving due credence to his learned opinion, the writer takes exception to his views, believing the true interpretation should be: "Leave hope behind who enter here." At any rate he recommends the reader make his own interpretation before entering.

STATE-WIDE PLANNING TO SAVE BEACHES

by TAM DEERING,*

ONE of the purposes of state and national planning should be the preservation of the entire ocean frontage of our country as park land, except such portions as are required for commerce, or have already been privately developed beyond recovery. European cities have preserved their waterfronts for the use of the people and have made them a central attraction in their civic life. Some of our American cities are now doing the same.

Chicago, after letting her waterfront become an eyesore, cluttered with a network of railroads and other undesirable developments, is now creating a beautiful shore line of parks and playgrounds. There are miles and miles of winding lagoons, yacht basins with flotillas of gleaming white sailboats, numerous bathing beaches used each summer by more than 2,000,000 people, the matchless Buckingham Fountain, Field Museum, Soldiers Field, and other civic features. Because Chicago permitted this waterfront to be monopolized in the beginning, she has had to spend $60,000,000 to regain it, and the superintendent of the South Parks system declared last October that still another $40,000,000 must be voted. They plan ultimately to regain and beautify the state's entire shore line on Lake Michigan.

Milwaukee is following the example of Chicago. Minneapolis has twenty-two miles of beautiful waterfront with park-like treatment of beaches and playgrounds. New Orleans is spending $15,000,000 on the development of Lake Pontchartrain, and when this development is completed the city will have a shore line of parks and boulevards five miles long, with eleven bathing beaches and every facility for yachting, boating, fishing, and other sports in a landscape of rare beauty.

Those of us who have lived in Boston know that among the chief delights of that city are the Charlesbank, the Back Bay Fens, Nantasket and Revere Beaches, the Strandway, Castle Island, Governor's Island, Wood Island, Columbus Park, Marine Park, North End Beach, Tenean Beach, and the miles and miles of park waterfront on river, lake, and ocean. Yet in spite of the generous provision made in Boston for waterfront sports, the Boston Park Commission in 1925 stated that in the summer the throngs of pleasure seekers at the beaches increase more rapidly than accommodations can be provided; with Boston's climate and with its population of enthusiastic bathers, the hot-weather crowds overtax all the public beaches and trespass upon the private beaches from Plymouth to Portland, Maine.

California's Plight

And what have we done in California? Cities in Southern California will have to spend millions to purchase "peep holes" through which the people may look out on the unfamiliar ocean surf. The waterfront is easy to exploit and quick to disappear. All along the Southern California coast, people are held back from their natural heritage by signs put up by private owners

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of the beach frontage: "Picnicking on Beach, Fifty Cents."

What has already happened in certain sections of Southern California will happen the length of the state and throughout the nation unless we make comprehensive plans and take vigorous action to preserve the waterfront. We must either do it now while it can be done at comparatively small cost, or we shall do it later "through the nose."

Compare the California situation with that of Vancouver, British Columbia, or Seattle, Washington. With a short summer season and water twelve or fourteen degrees colder than the waters of Southern California, Vancouver has four bathing beaches with excellent facilities, adjoining beautiful marine parks, and more than twenty-five miles of waterfront parks. Seattle has twelve public beaches with bathing facilities, and scores of miles of beautiful lake and oceanfront parks.

Of interest to all city and regional planners is the action taken by San Diego city and county in adopting a 'Save the Beaches' ordinance requiring all new subdivisions on the waterfront to dedicate a roadway paralleling the waterfront and to set aside the land between this roadway and the ocean as a public park. More than one hundred local organizations were mobilized behind this measure, and it was unanimously adopted by the County Board of Supervisors.

Business, Not Sentiment

The adoption of such an ordinance or any steps to keep the waterfront for the use of all the people is good economics for any city or county possessing an ocean, lake, or riverfront. Looking at it from a cold-blooded business standpoint, we know that the waterfront, if preserved, will perpetually enrich all property values throughout the county and even the state. One prominent realtor testified at one of the hearings in San Diego County: "The first question Eastern people who come into my office ask is, 'Can we get down to the ocean in this country? We left our homes and came to California because we wanted to enjoy the ocean beaches, and now we find that we must pay just to go and sit on the sand and look at the water.' "

The experience of Newport, R. I., has shown that public reservation of the waterfront does not injure even the most exclusive private homes. There millionaires have their private residences along the famous Cliff Walk, and the people have access to the ocean through a provision in the original colonial grant applying to the entire state.

It has been proved in San Diego County that the owner who sets aside an oceanfront roadway profits most of all, for instead of being restricted to selling only the first line of lots as waterfront property, every lot throughout his subdivision, no matter how far back, is a waterfront lot.

A bill was introduced in the California Legislature in 1927 to apply a "Save the Beaches" ordinance to the entire state. The bill passed the Assembly by vote of 53 to 21 but failed in the Senate by a single vote. It was opposed by a powerful lobby representing a few owners who hold hundreds of miles of the California oceanfront.

Every city, county, and state in America possessing a waterfront should adopt such an ordinance. The people in interior counties have fully as great an interest as those directly on the waterfront. Increasing leisure, good roads, automobiles, and airplanes are rapidly making the oceanfront the playground of the people in every part of the state and nation. The time will come when the men and women who tend the crops and carry on the necessary business in the hot arid regions of the interior of southwestern United States will escape the intense heat of the summer season by taking an airplane to the coast for an afternoon dip in the ocean.

Let us therefore, in California and in every section where there is a waterfront, do these things:

1. Require a roadway along the waterfront in all new subdivisions.
2. Secure as a public park the land between the roadway and the ocean.
3. Acquire by gift or purchase all frontage not likely to be subdivided, in

order that it may be used for a parkway.

4. Zone both sides of this parkway to prevent "hot dog" stands, billboards, and other objectionable developments.
5. Apply this treatment to rivers, lakes, and bays as well as the ocean shore.
6. Acquire great state, county, and city marine parks on rivers, lakes, and ocean providing abundant room for every water sport, for camping facilities, and for landscape development.

The waterfront on ocean, lake, and river does not belong merely to those who live beside it. It belongs as much to the people far removed. It is our country's greatest playground. The people who live beside waterfronts have a responsibility to preserve this gift of nature for all those to whom it rightfully belongs; the people of today, and the generations yet to come.

ARCHITECTURAL CONTROL IN GROWING FAVOR

APPLICATION of architectural control in Washington, D. C., and in Rancho Santa Fe, California, was an outstanding development in regional planning during 1930, declares a report of the Committee on City and Regional Planning of the American Institute of Architects, of which Charles H. Cheney of Los Angeles is chairman.

"In Washington, D. C.," the report says, "Congress has at last established architectural control over plans for all new private buildings facing public building groups, by passage of the Shipstead Bill in May, 1930, requiring their approval by the National Fine Arts Commission. Architectural control in Washington is particularly significant to the rest of the country because of its being done under the police power, as an extension of the principle that public welfare requires it.

"Meantime, on the opposite side of the continent, the beautiful country district of Rancho Santa Fe, near San Diego, California, has taken effective means to protect itself in this regard. Nearly 200 owners of estates and small farms totaling 5400 acres in area have signed and put on record a protective covenant not only establishing permanent architectural control, but also a maintenance association in which every owner has a vote, a complete zoning plan, and a building code for the entire area, which is not under municipal government.

"If the city of Washington is to express the soul of America, to become the true symbol of a great and rich nation, it is necessary that architectural control be established over all private buildings within the whole District of Columbia. To allow ugly and off-color or depreciating structures in any part of the city is without defense and will become increasingly abhorrent to the tax payers of the rest of the country as they come to understand the situation.

"Cities in the next decade undoubtedly must come to use police power for architectural control, just as they so generally took up zoning, under the police power, in the past decade. But architectural control is still new, and attempts to establish it must come cautiously with a well built up local demand and backing of public opinion.

"Courts follow public opinion. They cannot be counted upon to sustain this new use of the police power until the public is both informed and aroused. Much educational work must be done before it is safe to proceed.

"Washington has fortunately been educated to the possibilities of architectural control by a volunteer board of review, which for several years has carefully scrutinized each application for a building permit for private buildings in the District of Columbia. On this board, called the Architects Advisory Council, local members of the American Institute of Architects have served in rotation without compensation.

"They call the attention of owners, designers, and public alike to each set of plans that they find inadequately or improperly designed. This has done a great deal to make the public realize the importance of such advance scrutiny. A similar council has recently been set up in Cincinnati, to

check up all building permits. These boards are, however, voluntary and without power to enforce their findings.

"Establishment of government control over private buildings in Washington was at the urging of President Hoover, who said in his message to the last Congress:

" 'Under the provisions of various acts of Congress $300,000,000 has been authorized for public buildings and the land upon which to construct them. In consideration of these projects, which will contribute so much to the dignity of the National Capital, I should like to renew the suggestion that the Fine Arts Commission should be required to pass upon private buildings which are proposed for sites facing upon public buildings and parks. Without such control much of the effort of the Congress in beautification of the Capitol will be minimized.'

"The protective restrictions at Rancho Santa Fe are almost as complete as those of Palos Verdes Estates, which probably has gone farther than any other district of the country in completeness of protection given.

"The Rancho Santa Fe covenant is particularly notable because, when the owners found their short term and very incomplete restrictions expiring, they banded together, and imposed better long-term protection and a permanent means of upkeep for their district, with an annual maintenance tax. This is a valuable object lesson to the many real estate projects of the country with expiring restrictions.

* * *

"To date there are twenty-eight regional commissions and thirty-seven county planning commissions, according to the United States Department of Commerce estimate.

"During the year ninety-four new cities and counties reported passing zoning ordinances, the greatest number being in New York, New Jersey, and California. This brings the total number of cities comprehensively or partially zoned to over 900. The U. S. Chamber of Commerce finds that New York State appears to be in the lead, with 142 cities zoned, and Massachusetts first for city plans, having thirty-four city schemes completed.

"With the new census showing approximately 69,000,000 people now living in cities and towns of over 2500 inhabitants in this country, unemployment relief is largely a city and regional problem. Active steps have therefore been taken by many farsighted leaders and commissions to speed up programs or readjust them to increase public work during the slack period until the country again gets back to a normal business condition.

"Mayors and city and county officials generally have readjusted their budgets and taken on as many extra men as possible for public improvements, parks, and clean up work. Where public funds are not available, huge amounts are being raised through private subscription, and turned over to the mayor or park board for employment of men on park work as in New York City and elsewhere.

"Good environment is the aim and desire of practically all families in America. It is demanded not only for homes but for working conditions. In our new high standards of living it is the key factor. Today real joy of living and pursuit of happiness are demanded with ever louder voice in all parts of the country.

"People can no longer be satisfied with the careless ugliness, banality, and off-color appearance of most of our communities, cities, and regions. There is a rising dissatisfaction, protest, and contempt for city plans and city officials that omit sure provision for the essential qualities of beauty, charm, and restfulness. The craving for attractiveness of environment lies deep in all of us.

"Production of good environment must therefore be the aim of all city planners, architects, builders, realtors, etc. Their problem is to shut off the deluge of ugly, bad buildings. Competent machinery is essential to stop bad design and bad color before they get started, to insure reasonably good architectural design before a building permit is issued.

" 'Watch your architecture' is thus becoming the slogan of planning agencies."

SUGGESTIONS

for the

MEDITERRANEAN STYLE

from the native architecture of

RAVELLO and CAPRI

FARMHOUSE NEAR MONTEFINSCONE, ITALY

Original sketches from life

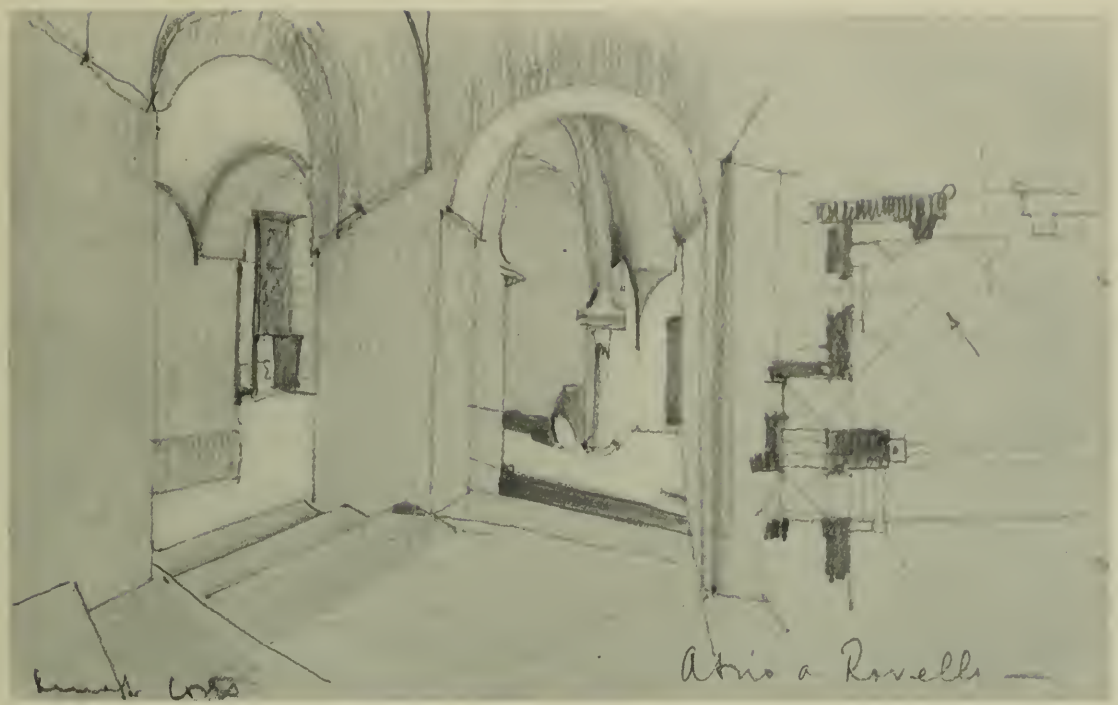
by

RENATO CORTE, Architect

COURTYARD IN ANACAPRI

Renato Corte

OLD CHURCH IN CAPRI
Renato Corte



ENTRANCE TO AN OLD PALACE IN RAVELLO

Renato Corte

CITY HALL IN RAVELLO, ITALY

Renato Corte

The ARCHITECT'S VIEWPOINT

- *Pacific Coast Architecture and the Modernistic Trend*
- *Modernism and Building Methods*
- *A Plea for Better Co-operation*

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THE response to the so-called modernistic trend in architecture becomes of increasing interest and importance. On this Western coast, where we lack the conservative traditions and attitude of mind believed to exist in older sections of the country, we might be expected to find departures from precedent more easy of accomplishment and a more receptive field for this modern attempt at a more logical interpretation of our building conditions.

While it is true that the traditional "Mission" has given the incentive to beautiful and logical architectural expression in California, developing a style that still retains its charm, any recent visitor to San Francisco and Los Angeles cannot help but be impressed with the way modern architectural conditions have been interpreted in the so-called modernistic spirit, with vigor and enthusiasm.

The North Pacific Coast, differing as it does from the Southland in its physical characteristics and lacking "Mission" or other architectural tradition, is also responding worthily to this modern movement when opportunity offers or occasion demands, as it has done to other phases of architectural expression. The climate of this section, resembling somewhat that of the north countries of Europe, this traditional architecture has appropriately furnished a precedent for architectural design to this newer civilization. The pages of the current issue of this magazine will show to some extent how precedent has been used and also what response is being made to the demand for the modernistic interpretation.

It is important here, as probably elsewhere, that modernism in architecture should be regarded in its true light, not as furnishing novel motives for superficial embellishment, but to meet the present day demand that a return be made to the basic principles of design as expressing modern requirements in building construction and use with a freedom in architectural expression not permissible with our former conservative adherence to tradition. Tradition still must necessarily retain its place in the continuous development of architecture, as in the past, and not be sweepingly discarded and ignored. It should, however, not be permitted to obstruct when new building methods and conditions demand logical consideration and expression in design.

Without discussing further the whys and wherefores of modernism which has been so ably done by thoughtful students and critics, in considering architecture for any section of the country we need to be reminded of a natural popular belief that this creates a new style without fundamental derivation from previous architectural developments. This results in superficial modernistic forms being used on any occasion to meet a popular demand for "up-to-dateness" in architecture. Of course this is subversive of true architectural progress and should not lead us to expect or demand this too sweeping elimination of the older forms. The eagerness to be "up to date" is responsible for much that the modernistic lacks in true architectural spirit. This appears to be particularly true of the older countries of Europe. The true modernistic expression must be thoughtful and logical.

WHILE we are undergoing this somewhat revolutionary attitude toward design, or rather a revulsion to a more logical attitude of mind as in the past, it might be well to apply this reasoning to the more practical side of architecture to see if in this we do not need a modernistic awakening. It is an oft-repeated truism that a work of architecture is a completed building and we are constantly reminded that co-operation is necessary to produce architectural results. Co-operation that becomes increasingly important as our building methods continue to become more and more complex.

A present day work of architecture results from the efforts of many different minds applied with a greater or less degree of effective co-ordination, finally ending in a completed structure. The architect must, and does, have the co-operation of the engineer from the start despite assertations that have been made to the contrary. He must avail himself of the knowledge and research extensively contributed by manufacturers of building material. He must also have co-operation from the builder to safely and economically plan and direct the owner's building project as he does with the craftsman who generally work under sub-contracts with the builder. Although our method of letting contracts on competitive bidding seemingly creates a condition opposed to co-operation with the builder, the necessity for this co-operation exists and becomes more and more important as new methods and material develop and increase the complexity of our building operations. The co-operation of the craftsman has been recognized as necessary for the architect to attain the architectural result he desires. Should we not direct more attention to the master-builder's co-operation to more effectively meet our modern conditions of building costs, planning and general practical adaptability?

* * *

CENTURIES ago, before building attained its later complexity, we had, seemingly, perfect co-operation in the production of a work of architecture. With the guild system, under which the great architectural masterpieces of the past were constructed, there was provided this thorough co-operation between designer, craftsman and builder. Modern business methods later introduced the contract system which destroyed this happy co-operative idea and arrayed the architect and builder on opposing sides of a struggle.

It is true that the preparation of complete drawings and specifications in advance of construction, made necessary by this contract system, developed a skill on the part of the architect, his collaborators and assistants in viewing the completed structure as a whole and making full economic provision for it, and the subsequent struggle of the architect and builder as representing opposing parties in a contract developed a somewhat invigorating resourcefulness, but will this best serve the public interest in the architectural enterprises of to-day and to-morrow?

With increasing complexity in the building problem, calling constantly for a closer co-operation between architect, engineer, builder and craftsman with others whose special ability is necessary for the complete production of a building, should there not be a more definite recognition and provision for a closer co-operative service with the builder from the initial planning of the project to its ultimate conclusion? As we "go modern" in design should not we attempt to go more modern in building methods, returning more to the co-operative spirit of the guilds as modernistic design is a return to the former logical principles which recognized architecture as meeting the true conditions of building?

The different agencies in the building industry appear to be sympathetically inclined toward the development of this existing co-operative spirit. All evidence a helpful attitude of co-operation with the architect in the solution of his difficult problem to

adequately meet a building situation from the points of view of practical planning, aesthetic expression and construction. The code of ethics of the Associated General Contractors of America is but an example of the desire to give the best service which pervades other branches of the building industry. Tradition and custom should not impede true modernistic progress.

CHARLES H. ALDEN, F.A.I.A.
Seattle, Washington.

EDITORIAL CHAT

ARCHITECTS, as well as draftsmen and young students, take keen pleasure in seeing good sketches, etchings and water-colors. Travel sketches in particular carry a world of interest and this work has been well named "the playful side of architecture." Next month our readers have a real treat in store for them. Joseph Mason Reeves has permitted the publication of his travel sketches which were made on his last trip to Italy as an artist member of the San Francisco Bohemian Club. Mr. Reeves acquired a reputation some years ago for his clever pictorial renderings. He is a graduate of the University of California. He rounded out his architectural training at the Pennsylvania Academy of Fine Arts, the Corcoran School in Washington and three and one-half years of study and travel abroad. Mr. Reeves' home at present is in Los Angeles.

* * *

THE modern movement has found expression in our ecclesiastical architecture—the Pacific Coast's first example being Mr. Albertson's St. Joseph's Church in Seattle, Washington. We are told there was some hesitancy on the part of the church people in accepting a modern design until assured by the architect that all religious requirements and traditional needs would be taken care of. How well this has been accomplished one need only look at the pictures which appear elsewhere in this issue. Note the absence of the time honored Gothic and Italian renaissance styles.

* * *

"I would like to say to manufacturers, investors, bankers and builders, 'The storm is over. Put your sails up.' "

This prognostication by Herbert N. Casson, who, in Forbe's Magazine, prophesied the Wall Street catastrophe of 1929 with uncanny accuracy, summarizes very well the present condition of the country. The quicker the sails are hoisted the sooner they will give momentum to the ship of industrial progress.

Already the boat has been shoved out of shallow water—it's floating—let's get her sailing! We don't expect big business this year. But we do look for a year of readjustment after the longest and biggest building boom the country ever had.

While the average duration of previous American depressions was twenty-three months, the violence of the storm in every case was over in *eight months.* There was a gradual upward movement that began eight months after the crash and lasted for fifteen months. By that time business had become normal.

Far-sighted business men will proceed now to get their plants in order, to build in anticipation of an increased volume of business, to install new equipment in time to allow for adjustments, experiments, and correction of minor kinks; and finally they will gradually intensify their selling efforts, especially their advertising. The time to advertise is when business is slack and the reader has spare moments to do some real reading, plus a lot of thinking. Then, with the return of prosperity, he is prepared to profit by what he has read—and the consistent advertiser is bound to reap the benefits of his investment. He has an advantage over his non-advertising competitor two to one.

ENGINEERING

and

CONSTRUCTION

Featuring

The Architects' Responsibility to the Construction Industry

by EDWIN BERGSTROM, F. A. I. A.

* * *

New for Old at Half Cost

by JULIAN C. MESIC

* * *

THE ARCHITECTS' RESPONSIBILITY TO THE CONSTRUCTION INDUSTRY*

by EDWIN BERGSTROM, F. A. I. A.

THE Architects' Responsibility to the Construction Industry is the subject which I have been asked to speak to you about. I shall not speak of the functions of an architect or of his responsibilities as an individual, but rather of his duties and obligations as an element of a great industry, and therefore of his responsibility to the other elements of that industry. To do this it is necessary to identify those elements.

The construction industry is most complex and the simplest building operation brings together many classes of labor and many kinds of material. There is no other single industrial operation that requires the thought of so many minds and the labor of so many hands. Every material that goes into the building operation must have been worked over and fabricated into a finished product before it can be wrought into the structure and finish of a building. To make these products, to bring them to the building site and to form them into the structure requires a vast amount of labor, and that labor is skilled labor, almost entirely. It is evident then that labor and the producers of the materials of construction are two fundamental elements of the construction industry.

The constructors who bring together the materials of construction and the equipment to erect them into a building and who bring together the labor to form and fit and fasten those materials, are a third fundamental element of the construction industry. Those who plan and design the building are a fourth essential element, and the banker who supplies the money for the building and its construction is the fifth element. The owner is the final element, and the one on which the others depend.

There are then six fundamental elements in every building operation. The owner, the banker, the designer, the producer, the constructor, and labor must each and all function in order that a building shall be produced and are the elements that must be considered in every discussion relating to the construction industry. It is true that there are many other activities which relate to the industry, but they have been grafted on to or have grown out of these six fundamental elements, for better or for worse. What is important is that every discussion of the industry must comprehend and include all of the six essential activities, not as the efforts of individuals and not as the efforts of individual groups, but always as joint and collective efforts. The activities of each group must function cooperatively with the activities of every other group and synchronize therewith in order to produce a building. If there is a duplication of efforts or an overlap of activities, or if one group undertakes activities not within its understanding and sphere, or if there is a lack of collaboration between the groups and one group fails to recognize its dependence on the other groups and remembers

*An address before the 17th annual convention of the Associated General Contractors of America, in San Francisco, January 28.

not that the industry is the important thing, then waste and confusion result, the public suffers and loses confidence, and the industry is harmed.

It is the function of the owner, one of the six fundamental elements of the building operation, to pay money out to all the five other elements. Four, if not five, of those other elements are dependent on that one unit for their livelihood and their existence. If we think of what these four elements take from that one unit, and of all the other activities that take livelihood from the same source, then we realize how insatiable are the calls on the resources of that one unit, and how important it is to the five basic dependent groups that those resources shall not be dissipated or wasted. I submit that there is no problem before the building industry today which is more fundamental and important than the regulation, protection, and conservation of those resources.

It must be the duty and the immediate responsibility of your group and our group and of the four other elements of the industry to recognize and maintain the distinctive functions of the fundamental elements in the industry; to cut down the surfeit of overhead that obtains in the industry; to eliminate costly and wasteful methods from the industry; to adjust the number of working days or the working hours in the industry to the conditions that must soon obtain; to build up competency. proficiency and efficiency of the members of the groups, and to ensure the integrity of the building operation. To that end every one of the elements should examine not only its own aims and motives and activities, but their collaborating relations to ascertain whither their combined endeavors are leading the industry. The most cursory of such examinations should convince any of these elements that the conservation of those resources whereof the groups derive their sustenance has not been a prime consideration up to the present time. It would seem the most simple economics that none of the five groups should attempt or be permitted to take undue tribute from the common source, but that all thereof should collaborate to conserve those essential resources and to regulate their flow into the industry.

Granting these basic elements and their combined responsibilities to the industry, it is not difficult to define and to differentiate the functions and responsibilities of each group.

The architect under this scheme of things has one function to perform in the industry and only one. That function is to practice architecture. It takes only three words to define that function, and beyond the field enclosed within these three words my profession should not go. The function of each of the other four groups that derive their livelihood from the owner can be as simply stated. The banker's function is to supply money; the producer is to supply materials; labor, to supply the hands; and the builder's to construct the building. This is the construction industry stated in its simplest terms, and I think it is fundamental that each of those groups shall return to and perform only the basic activities that are so simply stated, and shall eliminate therefrom all that is unnecessary and extraneous, before the construction industry can hope to function efficiently and without waste.

The members of my profession have always practiced architecture, but the architect, historically, has not always been a professional man. Just what constitutes a profession today, as distinguished from a business, is not clearly defined. At one time it may have denoted that the person practicing a profession had undertaken and passed through long years of study, preparation and apprenticeship, but today any one who can wield the clippers and the shears disposes that he has reached a professional status. I think it is important that the architects should practice as a profession, and that the professional idea should be encouraged in the building industry. The professional man has a little different slant towards industry and business than has the business man. The professional man may not have more integrity and he may not be so efficient as the business man, but generally he is not quite so ruthless. His training and education and all the traditions of

his profession inculcate in him a background of altruism and idealism that he should not lose and that should make him want to see a job through and well-done according to his light and his ability rather than to cut his performance to fit the compensation that he is to receive for it. Generally, the architect is not aggressive, because the nature of his responsibilities leads to other attributes. But I think he has a very real, if intangible something to give to the industry. I think it important that he inject into that business something of the professional attitude of mind. In doing so he will unconsciously absorb more of business into his profession. The American Institute of Architects has formed an affiliation with the Producers Council, just to bring this about. The Producers Council is a group of nearly one hundred of the producers of our principal building materials, organized nearly ten years ago by a few architects and producers who felt the lack of complete understanding between their groups and who had a vision of bringing about the things I have set out. The direct collaboration has brought only good to both organizations. The professional viewpoint is surely permeating the members of the Council and I am certain that they will bear witness that their business has not suffered thereby. They are looking at industry in just a bit different way, and just as surely our organization has been absorbing from them the finest ideals of business.

* * * To plan and design buildings is a prime function of the practice of architecture, and yet that may not be a greater responsibility for the architects than to bring the professional viewpoint into business, and to be the agency to bring the fundamental problems of the industry to the other groups and insist on their collaborative solution. But let us consider their responsibilities as planners and designers.

Traditionally it is the function and the responsibility of the architect to grasp and interpret the wants of the owner and to translate the building that his imagination builds for that owner into words and blue prints, so that all the groups of the industry can visualize exactly that dream, and in their turn can translate it into terms of money and materials and labor and therewith build for the owner the useful and beautiful building that the architect has dreamed. The plans of the architect are the key to the building operation, and the architect must always guide and synchronize the efforts of the other groups, if his building is to grow and function and be placed in the surroundings as he dreamed.

The owner must always depend upon the planner of his building, and the planner can bring about the results the owner expects only if he controls the materials that are to be used to form the building and their use and incorporation in that building. It seems important that this function and responsibility of the architects should not be lost sight of, but rather that it should be jealously encouraged and insisted upon by all the other elements of the industry. The architect functioning as the planning and the supervising element of the building operation is traditionally sound practice, and fundamentally it is a sound allocation of responsibility.

To plan and design a building safely is not a monopoly of our profession, or of the practice of architecture. Any person who understands the stresses and strains that are developed in and by building, and who knows the strength of materials and their characteristics, and who has had the engineering knowledge to calculate these stresses and strains, and to use and interrelate the materials in the building so as to utilize their strength and make the building and its construction safe, is certainly qualified to design the building. But to design a building that will be structurally safe only is not practicing architecture, though it is an essential of that practice. The practitioner of architecture must always assume the full responsibility for making his building safe and if he has not the engineering qualifications himself to design it so, then he must employ those who have the knowledge. The practice of architecture requires that the architect shall do much more than to arrange the structural elements of the building so that they result in a stable structure. He must arrange those necessary

structural elements so that they shall have orderliness, a pleasing outline, proportion, and distinction.

By these means the architect injects beauty into the structure, and beauty in a building does not impair its usefulness or add to its cost. Beauty in the building itself and beauty in its surroundings has a direct commercial value. This addition of orderliness, proportion and distinction to structure is the distinctive contribution of the architects to a building problem, and this contribution distinguishes the practice of architecture. This sharp distinction between the practice of architecture by architects and the designing of buildings by those without the architectural training and background, should be kept very clearly in mind. It has been said that architecture begins where structure leaves off, but that is not quite so, for architecture is based on structural forms and uses and arranges them in pleasing form and proportion. If by their practice of architecture, the architects do not invest the buildings with charm and if they neglect to consider them with reference to their surroundings and their placement on property, then they have been unjust to the owners and to their communities.

The practice of architecture carries other grave responsibilities, and the responsibilities increase as buildings grow more complicated in their details and appointments. To meet these increased obligations, the architects are being forced to abandon their cherished hopes to practice architecture as artists, and to make architecture a pure art. If the architects are to perform the duties imposed on them by the construction industry and to meet efficiently and promptly the obligations that are accruing to the practice of architecture, then they must use business procedure in their profession. It is the architect's duty and responsibility to give accurate and responsible estimates of cost; to eliminate visionary and idealistic planning; to effect economies in construction and designing, so that materials will not be wasted and so that the erection of the buildings will be speeded; to prepare accurate and complete specifications and other documents, and eliminate therefrom the ambiguity and looseness that invite trouble and extras; to prepare their drawings and to make their decisions and to issue their certificates and notices promptly, so that costly and inexcusable delays will be avoided; to forward the laws regulating the constructing and use of buildings; to assume without equivocation the responsibility for errors in the documents which they prepared, and to give the fullest cooperation, assistance and consideration to those who are operating under those documents. These are all grave responsibilities which must be met by the architects.

But there are still other responsibilities that are inherent in the practice of architecture. The architects should be consulting experts in regard to building laws and restrictions and real estate values, and in regard to the obsolesence and depreciation of buildings and their equipment; and in regard to the cost of operating buildings devoted to commercial and industrial uses and the income that may be derived therefrom. They should know and understand thoroughly the methods of financing buildings, and should be advisers in that regard, and particularly it is their responsibility to advise regarding the useful purposes of proposed construction, in order that the flow of the owner's resources shall be protected and conserved, and that investments in unnecessary, untimely and wasteful buildings shall be avoided. This latter responsibility is a serious obligation that should be foremost in the minds of every element of the industry, and concerted pressure should be exercised by them continuously, in order to regulate the flow of money into the construction industry, and to make impossible the vast inflations that occur periodically in the construction of buildings. The sooner the industry recognizes that its stability and earning power is greater with an even flow of money into that industry, the quicker will the pressure of the groups be exerted to prevent uneconomic building. This is a major program that is commended to your earnest attention.

I think that Mr. Kahn in a recent address summarized the architects' duties

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REMODELED BUILDING, 860 HOWARD STREET, SAN FRANCISCO
Villadsen Bros., Engineers and Contractors

NEW FOR OLD AT HALF COST

by JULIAN C. MESIC

PROFITS are two fold — the actual, plus community improvement — when reconstruction is so well executed that to all intents and purposes, a new building is obtained from an old, dark, and dingy pile— for $45,000 instead of $90,000, the cost of new construction. One is encouraged to clean up obsolete and shabby useless buildings when assured of skillful handling at a cost of $1.28 per square foot.

Villadsen Brothers, Inc., engineers and contractors, San Francisco, have just demonstrated the method in a sales and service building for Mustar-Wait Motors, 860 Howard Street, San Francisco. The building plan and construction, outside and in, are brought to the standards of new work.

The transformation is revealed in the photographs taken before and after remodeling was started. One can readily see how, with revision, the building now takes its place with dignity on the street, forming an attractive and complimentary background for a thriving business.

Originally the site contained two buildings. The first, one story and one hundred feet on the street; and the second, two story and

BUILDING AT 860 HOWARD STREET, SAN FRANCISCO, BEFORE ALTERATION WORK

twenty-five feet on the street, leading to a larger portion covering the remainder of the lot. Walls of both were brick with wood constructed interior.

The first building was entirely removed and rebuilt. The front wall of the second building was moved forward to form a fire wall between the service and sales departments. The mezzanine and parts of the second floor were removed. The remaining portions, braced by twenty-seven wood posts supporting the roof, formed a runway for pouring a new second floor placed half way between them. Openings left for the wood posts in the new concrete floor were later filled.

Cement floors on the first floor were removed, being at unsuitable levels, and replaced with concrete throughout; colored and scored for tile shapes in the display room and adjoining offices. Latin textured stucco walls, proper mouldings, grills and show windows give the final setting for new cars in the sales department.

In the service department, sixty foot span wood trusses were constructed under the roof rafters from the salvaged seasoned lumber. The trusses are supported on concrete pilasters in brick walls and a line of five columns inside the room. Salvaged lumber also supplied all concrete forms. The new second floor is supported on fifteen concrete columns instead of the former twenty-seven wood posts.

A double width concrete ramp connects these two floors. Under the ramp is a fireproof room for a gas fired boiler supplying steam for unit heaters in the sales department.

Light is now ample; due to new and improved skylights, solid steel section sash and frames in new openings at the side, and enlarged windows at the rear.

The life of the roof is guaranteed by rehot-coating, and gravel as required for weather and fire protection. The interior is protected by a sprinkler system.

One would be pleased with the building from any standpoint and no apologies are "in order" because of its being reconstructed.

THE ARCHITECTS' RESPONSIBILITY TO THE CONSTRUCTION INDUSTRY

[Concluded from Page 89]

very clearly. He said it was their obligation—

"To plan carefully so as to save waste and with a view to the future to make possible expansion when necessary, to construct economically without resorting to cheap materials which in the end prove costly, to encourage the development of new materials and make use of such after careful investigation, to design logically so as to gain maximum aesthetic results, to serve the owner's interests to the best of one's ability and in a thoroughly business-like manner, to see to it that he obtain that which he is entitled to, to treat both owner and contractor fairly, and to have in mind at all times the aesthetic and practical welfare of the community."

All these things I have set out seem to suggest the major responsibilities of the architectural profession to the construction industry. If I have set those responsibilities clearly before you, I hope you will get therefrom that our profession admits those responsibilities and assumes the obligations that are entailed. It intends to do its full duty to ever increase the competency and efficiency of its members and to make them fully qualified to maintain their rightful position and undertake their full responsibilities as a group in the construction industry. But when that is said and done, we must remember, and you as a group must remember, that severally we are but parts of one great unit of human endeavor, and that our thoughts and activities and our actions must be as joint partners in an undertaking and must be of the industry as a whole. This is our great responsibility.

WITH *the* ARCHITECTS

HALL OF RECORDS, MARTINEZ

William H. Weeks, architect of San Francisco, Oakland and San Jose, has been commissioned to prepare plans for a new Hall of Records at Martinez. The selection of Mr. Weeks was made from a list of half a dozen architects in the Bay region, the appointment coming from the Supervisors of Contra Costa County. The new building is expected to cost $500,000.

VETERAN'S MEMORIAL BUILDINGS

Plans have been completed by Henry H. Meyers, architect for the Supervisors of Alameda County, for a Veteran's Memorial Building in Hayward. Nearly all the large towns in the county have been improved with attractive memorial buildings from plans by Mr. Meyers. Several of these structures will be illustrated in an early issue of THE ARCHITECT AND ENGINEER.

BANK BUILDINGS

The Bank of America has recently awarded contracts for a $60,000 bank building in Chico and bids have been taken for a $40,000 bank and store building in Los Gatos. Twenty-one contractors submitted figures on the last named job. Plans are being completed for a bank building in San Mateo and alteration work in Bakersfield, H. A. Minton, architect.

GAS COMPANY BUILDINGS

Pacific Gas & Electric Company is erecting quite a few new service buildings throughout the state. The latest one to be started is at San Mateo where a contract has been let amounting to $40,000 for warehouse, garage and offices. The plans were prepared by the Company's Engineering Department. A new service group is also planned for Santa Rosa.

YUBA CITY SCHOOL

Davis-Pearce Company of Stockton, have been commissioned to prepare plans for a two story elementary school building at Yuba City, Sutter County, California. Bonds for $87,000 will be voted.

OAKLAND MERCANTILE BUILDING

Albert F. Roller, Crocker First National Building, San Francisco, is preparing working drawings for an eight story and basement reinforced concrete mercantile building for the John Bruener Company, now at 15th and Clay Streets, Oakland. The new location is 21st and Broadway in the same city. The approximate cost of the new structure is $600,000. It will cover ground area 100x208 feet with a 100 foot wing facing Valley Street. There will be the equivalent of eight stores on the ground floor. H. J. Brunnier is preparing the structural plans.

PORTLAND HOTEL

The Dinwiddie Construction Company of San Francisco has recently been awarded a contract to build a twenty-two story $3,000,000 hotel on Multnomah and East 13th Streets, Portland, Oregon, for the Lloyd Hotel Company. Morgan, Walls & Clements of Los Angeles are the architects. The exterior of the building will be faced with terra cotta.

HOLLYWOOD BOULEVARD BUILDING

The Los Angeles office of Lindgren & Swinerton, Inc., has been awarded a contract to build a Class A store and office building on Hollywood Boulevard, between Wilcox and Cahuenga Avenue, Los Angeles, for Thomas D. Barnett, at an estimated cost of $750,000. Morgan, Walls & Clements are the architects.

AUTOMOBILE SALES BUILDING

Charles S. Dean, architect of Sacramento, is completing drawings for a one-story brick automobile sales building and garage for Elsworth Harrold. The building will be 120x150 feet and will occupy the northeast corner of 22nd and Y Streets, Sacramento. It will cost $40,000.

SAN FRANCISCO RESIDENCE

Plans have been completed in the office of Bakewell and Weihe, 251 Kearny Street, San Francisco, for a brick veneer residence for Dr. A. Lincoln Brown. The house will occupy the north side of Broadway, west of Baker Street, San Francisco, and will cost $50,000.

PERSONAL

WENDELL W. WARREN, architect, announces that he has become associated with Edward M. Fowler, C. E., with offices at 1041 East Green Street, Pasadena. Architectural catalogs and trade literature are requested from the trade.

W. E. COFFMAN, architect of Sacramento, announces that John Stafford, formerly Superintendent of Construction, is no longer connected with this firm.

GEORGE W. KILIHAM, architect, of San Francisco, has been elected president of the Industrial Association of San Francisco.

LAWRENCE C. TEST has moved his office to 1041 East Green Street, Pasadena.

H. C. NICKERSON, architect, has moved his office to 1041 East Green Street, Pasadena.

ROBERT M. FARRINGTON, architect, formerly of 218 N. Beverly Drive, Beverly Hills, and WM. W. STICKNEY, architect, formerly of Van Nuys, announce a partnership under the firm name of Farrington and Stickney with offices at 9713 Santa Monica Boulevard, Beverly Hills, California.

J. KENDALL MASTEN, A.I.A., has established an office for the practice of architecture at 6809 Neptune Place, La Jolla, California. He would be pleased to receive catalogues and literature from manufacturers and material dealers.

CHARLES HAY, architect, of Seattle, who is supervising the construction of a theater in Anaconda, Montana, for B. Marcus Priteca, expects to return to his office in the Pantages Building, Seattle, shortly.

ARTHUR WHEATLEY, a former member of the architectural firm of Stuart and Wheatley, is busy in his new office in the Insurance Building, Seattle, working on plans for several new projects.

CASH & WOLF, Portland, have moved their offices from the fifth floor of the Railway Exchange Building to suite 213 in the same building.

SWARTZ & RYLAND, architects of Fresno, announce the removal of their branch office at Salinas from 373 Main Street to 506 Salinas National Bank Building. The Salinas office is in charge of J. E. Drake, who would be pleased to receive catalogs and other literature from the building trade.

UNIVERSITY GYMNASIUM BUILDINGS

Three new gymnasium buildings for the University of California are likely to be built this year, two in Los Angeles and one in Berkeley. The preliminary plans are already underway by the architects, George W. Kelham and Allison & Allison.

ARCHITECTURAL EXAMINATION

Examination for registered architects was held at the University of Washington December 15, 16 and 17. Those accepted as having qualified either through test or by reciprocity are:

Lawrence S. Hauser, 521 Belmont Avenue, No., Seattle.

Bjarne H. Moe, 603 East 43rd, Seattle.

Basil Jerard, 5605 49th S.W., Seattle.

Cyril A. Costello, 5629 11th N.E., Seattle.

Lusi Poyo, 1420 Hinds Street, Seattle.

James W. DeYoung, 1404 Alameda Street, Portland, Ore.

Martin Schacht, Failing Building, Portland, Ore.

Claud R. Butcher, East 942 33rd Street, Spokane, Wash.

Raymond C. Ricker, 6501 First Avenue, No., Seattle.

Walter C. Wurdeman, 505 Brooklyn Building, Seattle.

Elizabeth Ayer, 5308 Gold Court, Seattle.

Lester Paul Fey, 956 20th Avenue, Seattle.

Ward H. Ellis, 1312 North 46th, Seattle.

Leonard W. S. Bindon, Yarrow Point, Seattle.

The examining board members are Julius A. Zittle, Spokane; Harry H. James, Seattle, and George Gove, Tacoma.

PORTLAND CONSTRUCTION NEWS

Elmer E. Feig, architect, is preparing plans for an eight story apartment house at 16th and Montgomery Streets, Portland, Oregon, to contain 76 two- and three-room suites. The estimated cost is $300,000.

* * *

The Hill Military Academy group of thirteen buildings, has been let to the Austin Company, and it is announced that work will begin this month. The estimated cost is about $240,000.

* * *

Sutton & Whitney are architects for modernizing the St. Paul Hotel Building at 273 Alder Street.

* * *

Claussen & Claussen are preparing plans for an apartment house to be erected at 707 Flanders Street, at an estimated cost of $100,000.

* * *

The same architects are working on the modernization of flats located at Fifth and Montgomery Streets, together with the erection of another apartment, two stories, 50x100 feet, of concrete and brick construction.

OBITUARY

Rollin S. Tuttle

Rollin S. Tuttle, architect, died suddenly at his home in Los Gatos, California, January 8, aged 45. Mr. Tuttle was at his office the day before his death. He was best known as an architect of church structures and before entering the profession he served as pastor of a number of Methodist churches. He graduated from Wesleyan University, Middleton, Conn., and prior to going East he attended the University of Southern California at Los Angeles. He designed churches in Richmond, Ukiah, Eureka, Watsonville, Alameda, San Jose and other cities. One of his most successful commissions in recent years is the Los Gatos Mail-News Building which was illustrated in a late issue of The Architect and Engineer.

The deceased is survived by his widow, Mrs. Ida Mae Tuttle; two daughters, Carol and Jeanne Tuttle, and a son, Gordon Tuttle, who lives in Los Gatos. He also leaves two brothers, Paul Tuttle, architect, of Alameda and Hardy Tuttle of Los Angeles, and a sister, Mrs. William Wright of Pacific Grove.

Thornton F. Doan

Thornton F. Doan, pioneer architect of Northwest Washington, died at his home, 3550 Lakeway Drive, Bellingham, December 19, following a two year's illness.

Public school work in Northwest Washington occupied a great deal of Mr. Doan's attention, the Mount Vernon High School being one of his major achievements. The addition to the high school was his most recent accomplishment. He also designed the Skagit County Court House at Mount Vernon.

Mr. Doan took an active part in civic affairs, his spirit being exemplified in volunteering his service in the erection of Liberty Hall, headquarters of the American Legion Post in Bellingham.

BERKELEY CHURCH

Drawings have been completed in the office of W. H. Ratcliff, Jr., Berkeley, for a brick auditorium to be built at Le Conte and Scenic Avenues, Berkeley, for the University Christian Church. The improvements will cost approximately $75,000.

ADDITIONS TO SALINAS SCHOOLS

John J. Donovan, Tapscott Building, Oakland, has been commissioned to prepare plans for one new building and additions to existing school buildings in Salinas, the work to be done under a bond issue of $150,000.

JOSEPH L. STEWART BUSY

Joseph L. Stewart has moved to new offices at 206 Sansome Street, San Francisco. He reports having been commissioned to design a group of twenty-five frame and stucco dwellings in building tracts in San Mateo and Santa Clara Counties, the houses to cost from $7500 to $8500 each. Mr. Stewart is also preparing plans for a six-story apartment building on Sutter Street, west of Franklin, San Francisco, for the Mutual Owners Association.

WEST PORTAL SCHOOL

Working drawings are being completed by Dodge A. Riedy of San Francisco, for a two-story reinforced concrete addition to the West Portal School at Claremont and Dartmouth Streets, San Francisco. There will be an auditorium and classrooms. The cost is estimated at $142,000.

CHRISTIAN SCIENCE COLLEGE

Maybeck and White, architects, 163 Sutter Street, San Francisco, are preparing working drawings for a $2,000,000 educational group for Principia College at Elsah, Illinois. All of the buildings will be of reinforced concrete and stone.

$500,000 PASADENA RESIDENCE

A three-story and basement steel frame and concrete residence in Pasadena to cost $500,000, has been designed by Messrs. Marston and Maybury, 25 South Euclid Avenue, Pasadena, for Otto Thum. The house will have fifty rooms. A feature will be a pipe organ.

DEPARTMENT STORE BUILDING

Working drawings are being made by William Knowles of Oakland for a Class A department store building with frontages on Broadway and Telegraph Avenue, Oakland, for the Weinstein Company.

BERKELEY RESIDENCE

Plans have been completed by W. R. Yelland, architect, with offices in the Financial Center Building, Oakland, for an English house on the Alvarado Road, Berkeley, for Judge Taylor.

MONTEREY RESIDENCE

Plans are being completed by Williams and Wastell, architects of Oakland, for a stucco residence in Monterey to cost $40,000. The owner is A. F. Eingalli.

ARCHITECT-BUILDER WINS CLAIM

Declaring his conviction that, under modern conditions, one who is employed to perform labor of superintendence requiring high skill is not guilty of breach of contract merely because he may not personally visit the premises as often as the contract requires, Superior Judge Leon R. Yankwich has denied a new trial in the case of W. Douglas Lee against Fred Horowitz, attorney and owner of the fashionable Chateau Marmont apartment house in Hollywood.

Lee, who is an architect and builder, had a contract for the construction of the concrete shell of the building for which he was to receive $74,500. In addition to that he was to supervise the building. For this portion of the work he was to receive $14,000. He sued for $27,314.61, alleging that $12,065 was due him on the building of the shell, $10,958.15 on the supervision, and $4290.88 for extras.

Horowitz contested the claim. He contended that Lee had broken his contract for supervision by not being on the job at least once a day as required by the contract. He also claimed damages for faulty supervision. The case was originally tried by Judge Edward W. Engs of Oakland, sitting in the Los Angeles superior court. He heard the evidence for several days, but died without deciding the case. It was, therefore, necessary to retry it.

Judge Yankwich gave judgment for the plaintiff in the sum of $23,939.89. He allowed Lee the full contract price of supervision. The judgment, which Judge Yankwich now affirms, sustained the contention of Lee that, although an architect may not be personally present on the job, he is nevertheless entitled to compensation if the supervision is done under his direction. Judge Yankwich allowed Horowitz $3201.21 on his counter-claim for damages alleged to have been suffered through defective construction resulting from failure or defective supervision. By this ruling, Judge Yankwich declared the principle that one who is hired to supervise construction may exercise supervision through others. He also held that the owner may recover from the supervisor for any defects in the work done by the sub-contractors, where it appears that they might have been avoided by more careful supervision.

CATALINA TERMINAL BUILDING

A $300,000 Terminal Building at Avalon, Catalina Island, is being designed by Earl T. Heitschmidt, architect, Subway Terminal Building, Los Angeles.

NAMES ON PLANS

Names of architects, engineers or other persons by whom they are made, are now required on all plans filed with the Los Angeles city building department. Following is the text of a law section in the Los Angeles Building Ordinance covering the subject:

Section 3½. Architect or Engineer Required. (a) Every plan and/or drawing, and every sheet thereof, filed in the office of the Department of Building and Safety, shall bear the signature or seal of a certificated architect having a certificate as provided in an act of the State of California, known as, "An act to regulate the practice of architecture," approved March 23, 1901, as amended by Chapter 68, Statutes of 1929; or shall bear the signature or seal of a licensed engineer having a license as provided in an act of the State of California, known as "An act regulating the practice of civil engineering," approved June 14, 1929, Chapter 801, Statutes of 1929; excepting as otherwise hereinafter provided in this section.

(b) The provisions of this section shall not apply to any person, firm or corporation making and/or preparing, or supervising the making and/or preparing, of plans or drawings for any building, structure or work for such person, firm or corporation, in the event that there is a statement to such effect on each sheet of such plans or drawings.

(c) The provisions of this section shall not apply to any plan or drawing for only architectural purposes, in the event that every sheet thereof contains a statement to the effect that the person, firm or corporation making and/or preparing, or supervising the making and/or preparing of such plan or drawing, has notified the owner or other party for whom such plan or drawing was made, prior to the making of such plan or drawing, that such person, firm or corporation is not an architect; or in the event that such person, firm or corporation uses the title of "structural engineer" on each sheet of such plan or drawing.

(d) The provisions of this section shall not apply to any plan and/or drawing which does not include any architectural design and/or engineering.

(e) The provisions of this section shall not apply to any plan and/or drawing for a building used exclusively as a one or two-family dwelling, including the necessary buildings and/or structures for any such dwelling, in the event that no one such building exceeds a value of Ten Thousand ($10,000) Dollars.

(f) The provisions of this section shall not apply to any plan and/or drawing for any building and/or structure, in the event that the total value of such building or structure, to be erected or existing, does not exceed One Thousand ($1000) Dollars.

(g) The provision of this section shall not apply to the government of the United States of America or to any department office, officer or employee thereof, acting in official capacity for said government.

SOCIETY and CLUB MEETINGS

SOUTHERN CALIFORNIA CHAPTER

The regular monthly meeting of Southern California Chapter, A. I. A., was held January 13 at the Hotel Alexandria. Henry A. Babcock, member of the firm of William H. Babcock & Sons of Chicago, which is making an economic survey of the Bunker Hill regrade project, was the guest speaker. Mr. Babcock's subject was "Architecture and Building Economies," and dealt principally with the relation of the architectural plan to the economic experience of a structure. John S. Small, member of the Chicago Chapter, American Institute of Architects, and a member of the Babcock firm, also spoke.

David J. Witmer announced the passage by the Los Angeles city council of an ordinance, as requiring signatures on all plans accompanying building permit applications.

R. Germain Hubby, chairman of the membership committee, introduced Douglas H. McLellan and J. Robert Harris, who recently became members of the Institute.

The death of Garvin Hodson of Pasadena, a member of the Institute, was announced and the meeting informed of the adoption of customary resolutions.

Preceding the meeting the members assembled at the new home of the Los Angeles Stock Exchange and were shown through it by Samuel E. Lunden, architect for the building, and Floyd E. Sanford, secretary-manager of the Exchange.

The following members and guests were present: A. C. Zimmerman, F. E. Sanford, Robert H. Wiese, I. I. Perrault, A. S. Nibecker, Jr., Alexander M. Knox, L. A. Parker, Joseph Kaiser, J. J. Backus, John S. Small, George B. Allison, Paul O. Davis, D. H. McLellan, J. Robert Harris, Kemper Nomland, Raymond M. Kennedy, Palmer Sabin, V. Annis, C. R. Johnson, Earl Heitschmidt.

H. Roy Kelley, David C. Allison, Horatio W. Bishop, M. L. Barker, Eugene Weston, Alfred F. Priest, Sumner P. Hunt, William Richards, H. C. Chambers, Samuel E. Lunden, Pierpont Davis, Gordon B. Kaufmann, Floyd Mueller, Edwin Bergstrom, David J. Witmer, W. F. Staunton, Jr., Manfred De Ahna, Cyril Bennett, A. F. Rosenheim, Robert H. Orr.

G. Stanley Wilson, Reginald D. Johnson, Fitch H. Haskell, A. C. Weatherhead, Arthur R. Hutchason, H. Scott Gerity, D. R. Wilkinson, Paul R. Williams, J. T. Zeller, William H. Kraemer, Paul J. Duncan, Sumner M. Spaulding, R. Germain Hubby, H. J. Reed Barrett, J. J. Miller, Henry A. Babcock.

Following are paragraphs from the annual report of President H. C. Chambers:

The Chapter has held twelve monthly meetings in the past year. Your executive committee has held forty-two quorum meetings.

The Chapter meetings have varied in character. Some have been the occasion to visit and enjoy notable buildings, the work of our own members. In January at the Temple B'nai B'rith, the work of the Allisons and A. M. Edelman. A subsequent meeting at Harold Lloyd's place, the work of Messrs. Weber, Staunton and Spaulding, then at the School of Philosophy at the University of Southern California, designed by R. C. Flewelling, and in December at Robert D. Farquhar's California Club.

Round table discussions, a new activity, have been held at three of our meetings. The first one led by Reginald Johnson, on the subject of "Simple Earthquake Precautions." One on the subject of "Contracts," led by Edwin Bergstrom, and a third on the "Architect's Services," by Gordon B. Kaufmann. This last discussion should be continued at an early meeting.

The February meeting held at this hotel filled the main dining-room and a hundred non-member architects were our guests, as well as representatives of all branches of the building industry—on the occasion of the visit of Herrick Hammond, president of the American Institute of Architects, and J. Monroe Hewlett, vice-president.

The following notes are taken from the annual reports of the committees:

The Committee on Institute and Chapter Affairs, H. Roy Kelley, chairman, is responsible for some very valuable suggestions in the past year. Their recommendation to publish for the members the Chapter by-laws has been carried out, as has also their suggestion in the matter of introducing new members at meetings.

The beginning of round-table discussions originated

in this committee and is proving to be an interesting method for discussion of our problems and exchanging experiences. A further recommendation from this group is still a matter for future action by the Chapter, namely, the question of changing the Chapter name. On this subject the annual report of the committee reads as follows:

"The committee recommended that proper steps be taken to change the Chapter name to Los Angeles Chapter, believing that such designation more correctly and aptly now describes the Chapter and leaves the field open for the organization of other Chapters in Southern California."

Committee on Education — Winchton W. Risley, chairman—has carried on a year's hard and constructive work in co-operation with the department of trades and industries of the Board of Education of the city. This department, headed by its supervisor, L. G. Stiers, has been most sympathetic to the views of our Chapter in the matter of rudimentary architectural instruction in the public schools. Mr. Stiers has prepared an outline of a course of study based largely on our recommendation.

At the Frank Wiggins Trade School, this elementary course is now called "Foundations of Trade Drafting," and teaching of architectural design, which our committee feels cannot be properly done in secondary schools, has been eliminated. Special emphasis is to be laid upon freehand drawing, skill in graphic representation and technical information of trade practices, as well as practical problems involving the study of reading of architectural drawings.

This work has involved many meetings with educators, many visits to schools. "Your committee feels that definite progress has been made in the past year in establishing architectural educational work in the city schools, and desires to express its appreciation of the friendly interest and co-operation afforded by the Board of Education."

WASHINGTON STATE CHAPTER

The thirty-sixth annual meeting of Washington State Chapter, A. I. A., was held January 10th and was notable for the large attendance and marked interest and enthusiasm of those present. The new Washington Athletic Club was the scene of the gathering. After lunch the delegates were escorted through the building by its architect, Sherwood D. Ford. An interesting feature of the convention was Richard Lytel's exhibition of sketches as well as the drawings of Henry Olschewsky. They were on display in the convention hall. The address of Roland E. Borhek was characterized by a plain talk to the members concerning their responsibility to the Chapter. Other speakers were A. H. Albertson, Harlan Thomas, Arthur Loveless and J. H. Vogle.

Arthur Loveless, chairman of the committee on domestic architecture, led a discussion of architectural exhibits, and the sentiment was general that such exhibits do not interest the public as much as formerly, due to the elaborate magazine treatment of architecture and to improved transportation facilities enabling people to visit all parts of their communities.

Chairman Charles H. Alden of the publication information committee, reported that considerable good was accomplished from a radio broadcast and other forms of advertising. Stanley A. Smith, head of the department of architectural engineering, Washington State College, Pullman, reported on their radio broadcasts. The campaign is quite successful, he said.

George Gove, chairman of the educational committee, reported a competition of summer sketching participated in by eighteen men.

"The joint meeting held November 10 of the draftsmen and architects as the guests of the students of the University was successful, and the sketch competition drawings were shown at this time," reported Mr. Gove. "Prizes were awarded. Some of the money for the gift books was donated by friends of the Chapter and the rest taken from the Chapter funds. A traveling exhibit is now being arranged."

The honor award initiated by the Seattle Realty Board was discussed at length. The board had complained of lack of interest by architects, only nine entries by six architects having been submitted.

Two new members were officially accepted into the Chapter. They are William J. Bain, Seattle, and Nelson Morrison, Tacoma.

S. F. ARCHITECTURAL CLUB

The San Francisco Architectural Club held its annual meeting January 5th at 130 Kearny Street. The club has good reason to be proud of its new home, the most attractive and comfortable it has ever occupied. The interesting exhibits on the walls came in for a large share of attention and the work of Romualdo Jose Blas, consisting of projects and renderings done at Harvard and in the Atelier were much admired, as were the excellent water color paintings of Harold Wagner.

The election of officers resulted in the selection of the following: President, Ira H. Springer; vice-president, C. Jefferson Sly; Secretary; Donnell Jaekle; treasurer, S. C. Leonhaeuser. Directors—Wm. E. Mooney, Waldon B. Rue, William Helm. Executive secretary, F. Marshall Sanderson.

Retiring President Theo. G. Ruegg was presented with a beautiful watch charm in appreciation of his faithful service to the club.

NORTHERN CALIFORNIA CHAPTER

The Northern California Chapter, American Institute of Architects, met at the Clift Hotel, San Francisco, on Tuesday evening, January 27th, with one of the largest attendances in recent years.

The meeting was held jointly with the San Francisco District, of the State Association of California Architects, to which all members of the Northern Section of the Association were invited.

Guests of the evening were: Joseph B. Strauss, James H. Todd, Frederick T. Confer, Charles W. Duncan, George Keil, Atholl McBean and Irving F. Morrow.

President Henry H. Gutterson presided.

A telegram from Edwin Bergstrom of Los Angeles was read, regretting his inability to attend the meeting.

A telegram was read, announcing the activity of Mark Requa in Washington to have new federal buildings in this vicinity allotted to local architects. It was disclosed that Mr. Requa had been sent to Washington by Mr. Atholl McBean and an expression of appreciation was made to Mr. McBean for his effort in behalf of the architects.

Messrs. Will G. Corlett, James H. Todd and George Keil comprised a trio presenting musical selections with flute, violin and piano, which added pleasure to the occasion.

The first speaker was Joseph B. Strauss, designer of the new Golden Gate bridge. He spoke of the general design of the structure, and of its engineering and architectural features. He further dwelt on the political and economical aspects of the project.

Charles F. B. Roeth, President of the Northern Section of the State Association of California Architects, spoke briefly on the activities of this organization. Following his remarks, it was moved by Mr. Reimers, seconded by Mr. Kent, and unanimously carried, that this meeting approve the program of the joint legislative committee of the Association and Chapter, in its proposals to the State legislature, for amending the existing regulations governing the practice of architecture.

Harris C. Allen spoke on the subject of a State Building Congress.

Albert F. Roller, chairman of the San Francisco District of the Association, spoke for the advisers of the district, and touched upon their activities.

OREGON CHAPTER ANNUAL

The following attended the 19th annual meeting of Oregon Chapter January 20th: Messrs. Johnson, Johnston, Tucker, Purcell, Roehr, Doty, Crowell, Knighton, Lawrence, Holford, Herzog, Howell, Whitney, Wallwork, Jones, A. H. Smith, Forrest, Willcox, Logan, Hemenway, Jacobberger, Legge, Hinson, Morin, Linde, Sundeleaf, Parker, Whitehouse, Aandahl.

The guests were: Messrs. Harland Bartholomew, John A. Laing, Freeman, H. Abott Lawrence, Wallace Hayden, Dale Kirchman, Harold Moore (Oregonian), Silverthorne (Daily Journal of Commerce), Clifford Clausen.

The following resolution prepared by Mr. Parker was endorsed in general:

"WHEREAS, the Portland Art Association is an institution existing solely for service to the public, and carries on an educational and cultural work by means of its school and exhibits, under financial handicap, and

"WHEREAS, we believe in the principles of aiding educational and cultural public works by the use of public funds, as is done in the case of the Multnomah County Library, and in the cases of museums and libraries in a number of cities of the United States, therefore be it

"RESOLVED, that the Oregon Chapter, American Institute of Architects, does hereby express its approval of the proposed use of one tenth of one mill of the Multnomah County tax as an aid towards the maintenance of the Portland Art Association."

On motion of Mr. Whitney it was resolved that the Oregon Building Congress be requested to call a meeting inviting members of our committee and also a committee of the Portland Realty Board to be present for a general discussion of the proposed Building Code now before the legislature.

Chairman Lawrence (Education Committee) read a comprehensive report from which we copy the following recommendations:

1. More active Chapter support in getting lecturers on architecture and art to High Schools. Recently the A. I. A. Committee on Education received a letter from a prominent Boston woman calling our attention to this need—and how other arts, such as music, are active in the field.
2. A definite contact with Mr. Smith and his excellent work in architecture at Benson Polytechnic School
3. Cooperation with Exhibition Committee, to educational ends.
4. Cooperation with Public Information Committee, to aid in their educational program through articles in the papers, and through radio broadcasts.
5. Develop Pres. Kohn's program of securing talks at Chapter meetings. If visitors cannot be secured, use our own members. This appears necessary if meetings are to be interesting enough to draw attendance.
6. Appointment of special committee on Licensing Architects, to confer with State Board to make more effective law. That there are several instances of abuse of the present law is well known. The accumulation of surplus funds will likely revert to the State treasury unless enabling legislation is passed, safeguarding the moneys collected by the Board as fees, and permitting its use for employment of special Counsel, for scholarship loans or research material which might be used by architectural students at the University or elsewhere.
7. That an amount to be determined by the Chapter—say 5% of dues

received—be set aside annually for amplifying the Ion Lewis Scholarship in Architecture.

Chairman Aandahl (Membership) reported an encouraging growth, a membership of fifty now having been attained.

For some time the various professional societies of Oregon have considered the formation of a "Professional League of Oregon" with the object of strengthening their position in society. In the absence of Mr. Church, who has been delegated to keep in touch with this movement, Mr. Herzog gave some explanatory remarks. The Chapter is as yet not committed to join but members are requested to attend their meetings.

The election of officers for 1931 resulted as follows: the results being as follows:

President, Harold W. Doty; Vice President, Fred Aandahl; Secretary, W. H. Crowell; Treasurer, Harry A. Herzog.

W. G. Holford was elected trustee to serve three years. Held over trustees, A. Glen Stanton (1 year), Jamieson Parker (2 years).

Retiring President Johnson, in thanking the members for their cooperation during his term in office, asked President Doty to take the chair. President Doty thanked the Chapter for the honor, and assured the members he would do his best to carry on the good work.

On motion Wallwork and Legge were reelected to the Oregon Technical Council.

Dinner was served at 7:15, and the entertainment committee is complimented upon their attainment of Harland Bartholomew as the principal after dinner speaker.

We have received notification from the "Octagon" that Leslie D. Howell has been elected to Institute membership and assigned to Oregon Chapter, effective December 31, 1930.

Richard W. Sundeleaf has been elected to Chapter Associateship, effective January 5, 1931.—F. A.

WASHINGTON STATE SOCIETY

Election of officers featured the December meeting of the Washington State Society of Architects held at the Gowman Hotel, Seattle.

Officers for the current year will be:

John S. Hudson, president.

R. M. Thorne, Renton, first vice-president.

Julius A. Zittle, Spokane, second vice-president.

Stanley A. Smith, Pullman, third vice-president.

W. W. Durham, Tacoma, fourth vice-president.

O. F. Nelson, Seattle, secretary.

H. G. Hammond, treasurer.

E. Glen Morgan was elected trustee, with term expiring in 1934.

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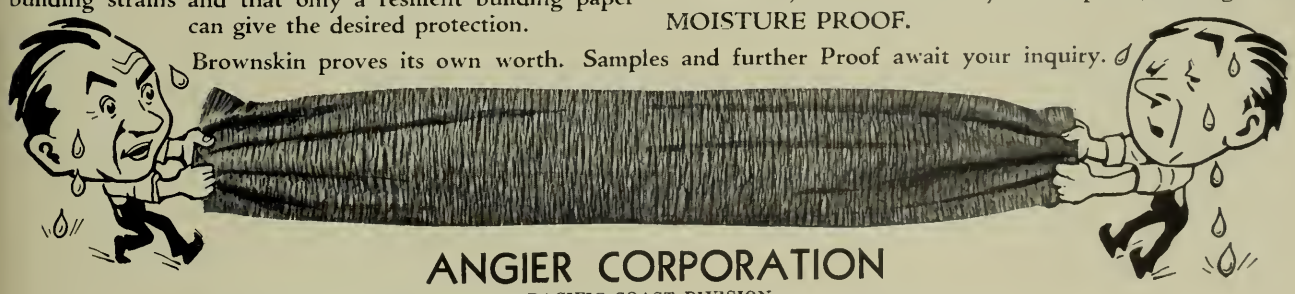

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THE REGULATION AND CONTROL OF HEIGHT OF CITY BUILDINGS

By CARL J. RHODIN

Chairman Section on City Planning of the San Francisco Commonwealth Club

THE City Planning Section of the Commonwealth Club has recently completed a study of the various features that relate to the characteristics of those buildings and dwellings that form a part of the most thickly populated and congested areas within a metropolitan city. I have reference to tall buildings or skyscrapers which now compose an important part of the downtown sections of all of our large cities. Originally conceived as office buildings, the use has now expanded so that we find tall buildings not only for business offices, but for hotels, apartment houses and even churches and theaters. Tall buildings are also utilized in connection with terminal developments, storehouses, garages, warehouses and manufacturing establishments.

Let us for a moment consider the historical development of tall buildings. Buildings over five or six stories were virtually unknown fifty years ago. At that time building construction had reached a rather uniform height not exceeding one hundred feet. The first building of the skyscraper type was erected in that seething center of human activities, Chicago. As we now view high buildings, it was not a high building, but, in its day, it was an epoch-making structure.

In what respects did this building differ from other buildings commonly constructed? It was different in this respect, that interior walls and floors were carried not upon supporting walls but upon free standing columns. In the early high buildings the outer walls still retain their character of a masonry structure enclosing the space, resting upon the ground and extending to the full height of the building; within the enclosed area were structural columns and floor beams.

In European engineering colleges in 1900 it was still taught that the practice of carrying floors and walls upon beams and columns was dangerous and unscientific. Interior walls and interior floors should be carried on interior partition walls such as, for instance, were employed in the old Palace Hotel construction in San Francisco, and should not be supported on columns and beams, but nowadays it is recognized practice to carry all the walls and floors on columns.

Let us now consider what are the basic factors that primarily promote the development and existence of buildings of great height.

The first requirement is mechanical transportation on the street level, originally by tramcars, later developed into electric traction systems, and finally into rapid transit systems above and below the street level. These mechanical means permits the moving of great populations in a very short period of time. It is not uncommon to see high office buildings discharge five or ten thousand people in the morning and evening hours. If mechanical means to move this crowd of humanity were not available, the high building would not exist.

The second requirement is vertical transportation in the form of elevators. The development of elevators coincides with the development of high buildings. Before the rapid elevator was perfected the high building did not exist. I well remember the first elevator, or, as it was called in those days, "lift", that I had ever seen. It was in a hotel in the city of Edinburgh, Scotland, in 1888, and the "lift" was considered a marvelous feature of that five-story hotel.

Turning now to the engineering characteristics of the modern high building, we find that, structurally speaking, there are only two principal factors controlling the height of buildings. The structural steel skeleton and the elevators. Investigations have shown that from the point of view of stability and strength, a steel skeleton building can be constructed to a practically unlimited height. There is no engineering reason why office buildings could not be constructed rivaling the Eiffel Tower, in fact they have been constructed even higher. A controlling factor is, however, the elevator capacity. A great number of elevators are required, more the higher the building is. In the last analysis, a large percentage of the floor area is occupied by the elevators.

It might be thought that foundation conditions would be a limiting factor. Experience has shown, however, that foundations considered safe for the common old building construction usually furnish no serious limitation to the height of buildings. There are practically no structural limitations.

We have seen that, from an engineering point of

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view, there are few, if any, real limitations to the height of buildings, but we are finding that there are other factors that enter that are disclosing themselves as limiting factors. These are the social factors—the health and welfare of the human material that occupies the building. So long as high buildings were rare and were of unusual occurrence, they were looked upon as beacons of progress and symbols of energy, enterprise and success, but with the vast resources of this great country there was so much of enterprise, progress and success that one high building began to crowd the other. The streets, instead of being open thoroughfares where light and air could circulate, became dark canyons where no sunlight would enter except perhaps for a moment in the middle of the day. The air became foul and stifling; with the present motor traffic, it has happened in the City of New York that traffic policemen have dropped at their posts, suffocated by the vitiated air.

Into the interior of buildings under these conditions, sunlight would never enter. Artificial lighting would be utilized for the entire period of the day and the condition of the air would be so poor as to seriously impair the health and efficiency of people employed in the building.

It is these social factors, the conditions of health and welfare, that we are finding to be the limiting factors.

The final test of a civilization is the human stock produced by that civilization. If, under a certain set of circumstances, a social order or social custom develops a race of people who are physically weak and mentally inefficient, that structure of civilization is doomed to die. There is always the barbarian at the doors ready to march in when the resistance against entry weakens.

Every epoch of human development has at its height and at its zenith produced great monuments of construction. These great monuments at the time they were built were heralded and spoken of as crowning achievements. But the student of history finds that the building era was not infrequently the last of the great peak of that particular nation. The magnificent buildings that were constructed were mausoleums of past culture and achievement.

Are we in our civilization building mausoleums commemorating individual enterprise, skill, pioneering and energy, or are we building beacon towers for the great development to come in the future?

This depends upon one thing, and one thing alone, the human stock that one generation produces to follow it. Let us look back for a moment.

Egypt: Its great pyramids and temples stand as monuments to a past civilization. The power and glory fell, due to weakness within. Why?

The Babylonian and Assyrian social order left monuments in law and tradition and in towers and hanging gardens. Records of a great civilization and social order that has vanished. Why?

The Greek and Roman civilization left temples, forums, roads and viaducts. Witnesses of the greatness and energy that produced them, now vanished. Why?

The great city of Ang-kor-vat in the jungles of Indo-China left temples and statues of vast size. There was a center of a teeming population of millions existing as late as 1400 or 1500. There is now not a living soul occupying the halls and courtyards. Why?

The answer to all of these questions is the same: The morale, the character, the health and strength of the tribe declined and fell and broke:

Because the social order, the customs, the morals, developed inferior stock that was swept away by the invaders, the barbarians and their allies, disease.

How do all of these matters relate to high buildings? Are they monuments, a benefit or a detriment?

We do believe that modern high buildings present a problem that should be studied. We believe that there are great benefits resulting from high buildings. We have also found that there are certain detriments and disadvantages to high buildings.

I may perhaps summarize in a general manner the result of our considerations. That is: Build high and lofty, but build "wide and handsome." If you want to go high up in the air, put the building on a base of ample dimensions and on a piece of ground large enough.

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LONG BEACH CLUB

Hugh R. Davies has been elected president of the Long Beach Architectural Club, succeeding Nat A. Piper. Cecil Schilling is vice-president and Joseph H. Roberts retains the post of secretary-treasurer.

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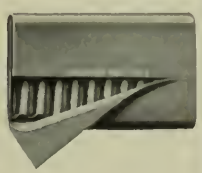

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FORMER DEPRESSIONS

Walter W. Price, partner of Livingston & Co., New York brokers, published a statement a few weeks ago in which he recalled former depressions in this country.

Price was a runner in the Bank of New York when James D. Fish closed the doors of the Marine Bank. He saw the Grant & Ward failure that followed. He was in the brokerage business at the time of the Baring panic, which marked uniform prostration throughout the world. He lived through the dull period from 1893 to 1898, and the panics of 1901, 1907, 1909, and 1914, when the Stock Exchange was closed.

Yet in none of these years, nor 1920, does Price recall a state of mind "as hysterical and apprehensive as that which exists at the present time."

He thinks the mood of the people during the current depression is absurd and unjustified by actual economic conditions. He cites many statistical indexes, and denies that they justify the deep pessimism that prevails. He asks us to contrast our own state of mind with the spirit of the British people throughout fifteen years of overwhelming difficulties; with the bouyancy of the Frenchman; and with the fortitude of the German people who were reduced to the lowest point financially in their history as a nation.

Price continues: "I have seen Union Pacific in 1897 worth nothing and assessed for $15 a share. I have seen the Atchison Railroad sold under foreclosure in 1895. I have witnessed the day when, by reason of bad legislation, the consequent endless chain of greenbacks developed, as the result of which the supply of gold in the United States Treasury had sunk below fifty millions of dollars and had to be replaced, through the direction of Grover Cleveland with the aid of J. P. Morgan, by the purchase of gold in Europe to the extent of one hundred millions of dollars which was paid for in 4% bonds issued by this government at par without commission.

"But throughout all these depressing periods, I have never witnessed a state of mind as exaggerated as that which now exists. Throughout the past, people have invariably been able to make a living by reason of enforced economics and in such periods, the saner and better qualities of mankind have asserted themselves and reflected a morale that was distinctly favorable as compared with that which exists at present."

Price suggests that we are acting somewhat like spoiled children—at least that is the way people are acting in Wall Street. Whether his picture represents sentiment in other parts of the country, the reader can judge. Unemployment, poor business, and declining profits are never pleasant. But business is still going on, the major part of our population is employed, and profits are being made, despite the weeping and wailing.

Let us have faith, pleads Price, in the ability of our people to make rapid recovery from the depression.

modern—

Inset photograph shows two of the Kinnear Rolling Steel Doors used in the new Shell Oil Company Building in San Francisco. Modern in every respect, it was only natural that Kinnear Rolling Doors should be chosen for this magnificent edifice.

YES, modern as the newest building from a standpoint of efficiency, yet not new or untried. Kinnear not only originated the rolling steel door, but has been responsible for every worth while improvement in design and construction. You'll find them in skyscrapers, factories, warehouses, terminals — everywhere the best in rolling doors is wanted. Illustrated catalog and estimates furnished on request without charge or obligation.

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Boston Chicago Cincinnati Cleveland Detroit New Orleans
New York Philadelphia Pittsburgh Kansas City Washington
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ARCHITECTURAL BRONZE

BY THE

Kawneer COMPANY

NILES, MICHIGAN
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PRODUCTS

RUSTLESS METAL SEALAIR WINDOWS - DOORS - ARCHITECTURAL CASTINGS AND STORE FRONTS

FROZEN MUSIC AND THE MELTING POT

By Louis La Beaume, F.A.I.A.

IT might be considered indelicate, certainly it would be hazardous, to refer to the profession of architecture as the oldest profession in the world. But we may conservatively consider it among the oldest. Specialists must have been called in to assist in the building of almost the first rude domiciles; for what supposition could be more reasonable than that the early fighters and hunters, fishers and traders should delegate the irksome and tedious details of building to those docile members of the tribe, who because of their sweet tempers, their glistening love of order, their fantastic absorption in the quest of beauty had come to be regarded by their fellows as gluttons for punishment? What their clients called these primitive practitioners of the art which commands our devotion I am not prepared to say. Probably many names, some of them so scurrilous that it is just as well that they remain obscured by the mists of history. To preserve their own self respect however (and it may be advisable to state here that any positive assertion of mine now or hereafter may be regarded as a pure assumption rather than the flower of research or wisdom) I feel quite sure that these first contrivers of shelters or shacks or stockades arrogated to themselves some high falutin name, just as our modern specialists call themselves realtors, or morticians or orthopedists or gynecologists. And they clubbed together; they sought solace from the slings and arrows of outrageous fortune, from the proud man's contumely in each other's presence. But I doubt if any such number of them as are gathered here tonight ever got into real communication, for their world was small and the roads quite bad. Consequently, the ideas they had changed more slowly even than ours do. As a matter of fact the same ideas lasted for many, many generations. One pyramid was very like another; it was good form that it should be so.

Symbols had a sacred value and for ages were immune from the attacks of iconoclasts. True, under the hand of the more commercial members of the craft they tended after a long while to become perfunctory as the entire civilization of an era became jaded and was swept away by the rise of a fresh one.

So it was a comparatively quiet and unvexed life they led, these early architects, for that is the proud name we have given them as we recognize in them many of our own virtues. Under the blue skies of Hellas they whittled away at huge blocks of Pentelic marble, rounding the shafts of their lovely columns, perfecting the proportions of stylobate and entablature, and filling their pediments with Godlike effigies. And finally after ages of experiment they achieved their apogee in the Parthenon, a temple like many another but unlike the others in its impeccable perfection. Great ideas have a way of lasting a long time, growing in beauty and clarity as they cleanse themselves of the

little parasitical heresies and vagaries that cluster around them. Perhaps they never really die, but the parasites grow up again to obscure them, and a new race of men searching after beauty may find it through other formulae.

We are all fairly familiar now with the sequence of these searchings, these findings, these ebbings and flowings, these flowerings and decadences in the history of civilization, which is of course, the history of architecture; unless it were better to say in the history of architecture which is the history of civilization. The whole panorama of man's struggle seems spread out before us today. That is our good fortune and it is in a sense our curse. If a little knowledge is a dangerous thing, too much may prove a veritable disaster.

As we look out over the wide panorama of history from our vantage point and trace the winding road that men have followed, we see it branching off into cul de sacs and impasses. Here and there it is broken or lost to sight, only to be regained by tortuous detours. From the main highway running through Rome many roads turn off winding through mountain passes into fertile valleys, going north into France, further north into Flanders and by means of ferries, projecting themselves into England and Norway; going south and west into Spain, only ending at the sea which until a little while ago thwarted man's philanderings. The panorama with its main highway and network of byways and branching roads which we are contemplating, has its eastern limit somewhere near the borders of the Red Sea. We don't think much, or haven't thought much, of the map of Asia, for our civilization is Occidental, not Oriental, and our chief interest is in the paths that have led toward the west.

Climate and war and the worship of God, trade and the lust of gold, the struggle for power, the struggles for liberty—and fire, these things have all affected the architectural panorama. Which, most of all, it is difficult to say. The Mediaevalists might say the love of God, the Classicists the love of liberty. War opened the path of the Renaissance into France, the great fire of London cleared the way for it in England. The love of gold, and again the love of liberty, lured men across the ocean; and perhaps you in Chicago will say that fire has done more for civilization and architecture, than any other single force. Fire can of course be a great blessing, and as we reflect upon the contemporaneous scene, the thought may come to some of us that earthquakes are not an unmitigated evil.

Well, here we are in Chicago with all our architectural heritage, the frozen music of all the ages, clanging before our eyes. When we think of the gamut we have run on these western plains in the short span of a hundred years, we must envy old Phidias his leisurely preoccupation with his few and simple and beautiful ideas. We must long for the serene com-

OAK FLOORING

like this has beautiful texture

The texture and pattern of "Perfection" Brand Oak flooring make possible a finish that is seldom found on any other flooring. You can depend upon "Perfection." In modern plants operated by skilled lumbermen, only the finest oak is selected. After prompt seasoning and kiln-drying, it is perfectly milled and matched so that it lays smooth and stays smooth. It is graded and handled so carefully that upon arrival anywhere, it is always in perfect condition. Leading lumber dealers gladly feature this nationally advertised brand.

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"PERFECTION"

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"Perfection" Brand Oak Flooring, Blocks and Planks, may be obtained chemically treated by the *CELL izing process.

There's a size and grade for every type of structure, new or old. Ask your architect or building contractor for an estimate.

"PERFECTION" Brand Dimension
Cut to Size - Moulded to Pattern - Solid and Glued

The Bull Dog Method Saves Time and Labor

STEP ONE—PLACING CLIPS. *Note how easily clips are placed in exactly proper position. Single or double guide board insures correct alignment.*

THE Bull Dog Method of anchoring wood floors over concrete saves valuable construction time. No fill to dry—no beveling or shimming—sleepers and finished floor are laid at one time.

Other reasons for using The Bull Dog Process are: *elimination of dry rot*, doubling floor life; reduction of dead load 18,000 lbs. to 1,000 square feet of slab area; permanent and secure sleeper anchorage, preventing buckling, squeaking and doming. The Junior Clip (5/8" wide) may be used with or without a fill (dependent on the service duty of the floor.) When a fill between the sleepers is desired, any cheap, inexpensive mix such as sand, cinders or cinder concrete can be used.

Millions of BULL DOG FLOOR CLIPS on over 8,000 jobs carry testimony of satisfaction. Made for 2, 3 and 4 inch sleepers. Regular and Junior Styles. Friction tight nailing facilities (nails gratis.) Write for catalog and samples.

THE BULL DOG FLOOR CLIP CO.
108 N. First Ave., Winterset, Ia.
135 Representatives—15 Warehouse Stocks

BULL DOG Floor Clips

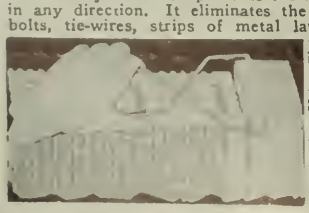
REGULAR CLIP—*3 sizes, 2, 3 and 4 in. 20 gauge galvanized iron.*

Original Patent granted June 14, 1921
Reissue Patent granted June 29, 1924
Process Patent granted May 19, 1925

JUNIOR CLIP—*3 sizes, 2, 3 and 4 in. 18 gauge galvanized iron.*

The Bull Dog Buck Anchor

THE Bull Dog Buck Anchor forms a rigid truss in the mortar joint which prevents the movement of the buck in any direction. It eliminates the use of nails, screws, bolts, tie-wires, strips of metal lath and iron, and all pounding against the back sides of the buck. Made in three widths of No. 10 Galvanized Steel Wire: 3 in., 4 in., 6 in. Ten per cent of anchors in packing cases are shorts to take care of spaces too short for the regular size anchor.



placence with which the columns were spaced about the Forum, with which the big bowls or bull rings were duplicated for chariot races and martyr baiting. And, after the Roman power had crumbled, and the blood of the martyrs had caused the great cathedrals to flower everywhere in Europe, crowding out all memory of the decaying and neglected temples, how tranquil the middle ages seem! How happy the good Abbots and their master masons whiling away the centuries as they piled stone upon stone with the faith that their pinnacles might reach to Heaven itself, seem to us now. Even the shock of the Renaissance seems mild to us; its turbulence seems tame in comparison with what we have gone through. I am not referring to the feuds between Guelphs and Ghibellines or to any of our contemporaneous condottiere or sawed off gunmen! The turbulence I speak of is purely architectural; mere gun play is child's play by contrast.

We spoke a moment ago of the span of a hundred years. That hundred years begins with the stockade of Fort Dearborn and runs past the Wrigley Building into Wacker Drive or out into the lake where we see the mirage of another World's Fair, but, since we are concerned tonight only with architecture, let us cut that century in two. For the word wasn't much used before the big fire, was it? Back in Revolutionary times, Thomas Jefferson and Dr. William Thornton and Major L'Enfant and a few cultivated amateurs dallied with it, but aside from these and Bullfinch and McIntyre and a scant few others, as a people, we were concerned only with building, and mostly with canal building and railroad building. For practical purposes we may date our Renaissance at about the time Mrs. O'Leary's cow kicked over the lamp. The light that spread from that lamp lit up the sky, and the whole horizon, and revealed to us the panorama we have been looking at almost ever since.

Chicago was founded about, was it not, 1833, full two hundred years after the systematic colonization of this continent began, and something more than three hundred years later than the first outposts of the Spaniard were established. Why then do we say that the story of architecture as far as Chicago is concerned is the story of only the last fifty years, and by inference associate the same brief period with the development of all our American architecture? We know well enough that the Spanish adventurers and colonists in the sixteenth century built missions and haciendas and forts quite in the mode with which they were familiar at home. In the seventeenth and eighteenth centuries the French and the English transplanted the current classic motifs of the late Renaissance in New England, in the Virginias, the Carolinas and Louisiana. Their tradition lingered a little while into the nineteenth century and then the steam engine set men's minds spinning, and the world suddenly became one vast factory. Englishmen and Americans (and there wasn't as much difference be-

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—

Common, $28 to $33 per 1000 laid, (according to class of work).

Face, $70 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $.90 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $.80 sq. ft.

Common, f. o. b. cars, $9.50 plus cartage.

Face, f.o.b. cars, $40.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 75.00 per M
4x12x12 in.	85.00 per M
6x12x12 in.	124.00 per M
8x12x12 in.	188.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$87.00
6x12x5½	60.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—60c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.

Terazzo Steps—$1.50 lin. ft.

Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Eliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
Eliott top gravel, at bnkrs.	1.40 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.

Cement, $2.44 per bbl. in paper sks.

Cement (f.o.b. Job, S. F.) $2.64 per bbl.

Cement (f.o.b. Job, Oak.), $2.64 per per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Atlas "White" .....$ 8.50 per bbl.

Forms, Labors average 22.00 per M.

Average cost of concrete in place, exclusive of forms, 28c per cu. ft.

4-inch concrete basement floor.....13c to 14c per sq. ft.

4½ inch Concrete Basement floor .....13c to 14c per sq. ft.

2-inch rat-proofing....6½c per sq. ft.

Concrete Steps.....$1.10 per lin. ft.

Dampproofing—

Two-coat work, 18c per yard.

Membrane waterproofing—4 layers of saturated felt, $5.00 per square.

Hot coating work, $1.80 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).

Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—

Sand, 50 cents; clay or shale, $1.00 per yard.

Teams, $10.00 per day.

Trucks, $21 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot.

Plate 80c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 27c per square foot.

Obscure glass, 25c square foot.

Note—Add extra for setting.

Heating—

Average, $1.70 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

Common, $21.00 per M (average).

Common O. P. select, average, $28.00 per M.

1 x 6 No. 3 Form lumber	$15.00 per M
1 x 4 No. 1 flooring	46.00 per M
1 x 4 No. 2 flooring	40.00 per M
1 x 4 No. 3 flooring	36.00 per M
1 x 6 No. 2 and better flooring	40.00 per M
1¼x4 and 6 No. 2 flooring	50.00 per M

Slash grain—

1 x 4 No. 2 flooring	$33.00 per M
1 x 4 No. 3 flooring	30.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	4.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

	13-16x2¼" T&G	¾x2" T&G	5-16x2" Sq.Ed.
13-16x3¼" T & G Maple			$130.00 M ft.
1 1-16x2¼" T & G Maple			140.00 M ft.
⅞x3½ sq. edge Maple			127.00 M ft.
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	
Laying & Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$2.80
2 ply per 1000 ft. roll	4.20
3 ply per 1000 ft. roll	6.50
Sash cord com. No. 7	$1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $45.00 ton

Nails, $3.00 base.

Belgian nails, $2.75 base.

Millwork—

O. P. $78.00 per 1000. R. W., $78.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $5.00 and up. each.

Doors, including trim (single panel, 1¾ in. Ore. pine) $6.50 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 20c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $4.50 each.

Dining room cases, $6.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.

For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo.	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

NOTE—Above quotations are for 7/8 inch wainscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile Set in place.

Verde Antique	$2.50 sq. ft.
Verde Antique	3.00 sq. ft.
Tennessee	1.50 sq. ft.
Alaska	1.35 sq. ft.
Columbia	1.45 sq. ft.
Yule Colorado	1.45 sq. ft.
Travertine	1.60 sq. ft

Painting—

Tennessee	1.70 sq. ft.
Two-coat work	30c per yard
Three-coat work	40c per yard
Cold Water Painting	8c per yard
Whitewashing	4c per yard

Turpentine, 78c per gal. in cans and 63c per gal. in drums.
Raw Linseed Oil—$.84 gal. in bbls.
Boiled Linseed Oil—$.87 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

Per Lb.

1 ton lots, 100 lbs. net weight 11¾c
500 lb. and less than 1 ton lots 12c
Less than 500 lb. lots 12½

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt. 11¾c
500 lb. and less than 1 ton lots 12c
Less than 500 lb. lots 12½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 13¼c
500 lb. and less than 1 ton lots 13½c
Less than 500 lb. lots 14c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.85 lineal foot
12-inch	2.10 lineal foot

Pipe Casings — 12" long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.38
2 coats, lime mortar hard finish, wood lath	.50
2 coats, hard wall plaster, wood lath	.52
3 coats, metal lath and plaster	.95
Keene cement on metal lath	1.20
Ceilings with ¾ hot roll channels metal lath	.66
Ceilings with ¾ hot roll channels metal lath plastered	1.35
Shingle partition ¾ channel lath 1 side	.60
Single partition ¾ channel lath 2 sides 2 inches thick	2.05
4-inch double partition ¾ channel lath 2 sides	1.25
4-inch double partition ¾ channel lath 2 sides plastered	2.30

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$ .90
2 coats Atlas cement, brick or concrete wall	1.15
3 coats cement finish No. 18 gauge wire mesh	1.60
3 coats Atlas finish No. 18 gauge wire mesh	2.90

Wood lath, $4.00 per 1000.

2.5-lb metal lath (dipped)	.18
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.23
3.4-lb. metal lath (galvanized)	.27

¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.
Hydrate Lime, $19.50 ton.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—
From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $5.00 per square for 30 squares or over.
Less than 30 squares, $5.25 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—
Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, $1.00 sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Stone—
Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 70c per lineal foot.
Note—Consult with agents.

Steel Structural—$90 per ton (erected). This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $86.00 to $90.00 per ton.

1931 WAGE SCHEDULE FOR SAN FRANCISCO BUILDING TRADES

Fixed by the Impartial Wage Board

Craft	Journeymen Mechanics
Asbestos workers	$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00
Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housesmiths, arch. iron, skilled all branches	9.00
Housesmiths, arch. iron, not skilled all branches	8.00
Housesmiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scraper teamsters, 2 horses	6.00
Scraper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Friday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturdays, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

tween them then as now) being practically minded, that is to say a little stupid as to the value of beauty, and by temperament inclined to a greater interest in morals, machinery and money than in any of the muses, quickly assumed leadership in the industrialization of society. All thought of art, and particularly of the arts allied to architecture was eclipsed by the universal preoccupation with machinery. A good many disrespectful things have been said about Queen Victoria, and perhaps being in Chicago where we have been led to believe her family enjoys no great popularity, I ought not to speak a word in her favor. But no monarch, however cruel, however monstrous, however depraved has been so stigmatized as she by that descriptive adjective which conjures before our eyes the hideosities of architecture, furniture, bric-a-brac and costume to which we refer as Victorian. Chivalry, common decency demands that the poor queen should be absolved of at least part of the blame for the artistic infamy associated with her name. She was no more culpable than any of the presidents who reigned coincidently with her, than Lincoln or Grant or Rutherford B. Hayes. James Watt was the real culprit; he was the guilty party. From the day he watched the steam escaping from his mother's teakettle Art was in for a terrible wallop.

When Mrs. O'Leary's lamp turned over our artistic consciousness was at its feeblest. For fifty years everything had conspired to smother it. The gold rush, the wart of the rebellion, the jig-saw, the cast iron deer, the beaded portiere, and the luxuriance of whiskers had all tended to distract our attention and obscure our perception. We had lapsed into a state of innocence which perhaps we may never know again. But while a great deal of money had been wasted on brown stone palaces, black walnut dressers, timber tourelles, turrets, and orioles, plush upholstery and fantastic gasoliers, a good deal of money had been made and saved. Steam had begun to make us rich. Two generations immune to beauty had laid the foundations of our fortune. Doubtless our grandfathers died in peace and looked forward to an eternity of bliss in a mid-Victorian heaven. But children have a way of sneering at the ideals of their parents and rich children particularly are prone to affect superior tastes especially if they have had the advantages of a little education and some foreign travel. So gradually the tide began to turn and we began to yearn for manners and refinements that were not ours by habit. Travel and photography, Ruskin and Charles Eliot Norton, and the pre-Raphaelites, began to open the eyes of the oncoming generation to the art and architecture of other time and places. We became violently self-conscious, morbidly ashamed of our gaucheries and indefatigable in our efforts to become as cultured as we were rich.

Our meagre, but honestly come by, architectural patrimony still visible in the original thirteen colonies seemed insignificant even to those nearest it, by com-

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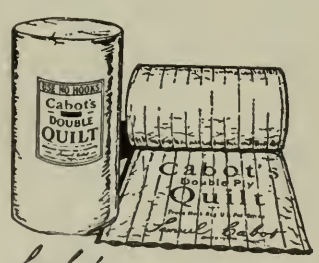

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parison with the treasures of Europe, while west of the Alleghany mountains there was nothing but the log cabin, the false front of the frontier saloon, the Baptist Church, or the Cracker Castles of Euclid Avenue in Cleveland, South Michigan Avenue in Chicago, Lucas Place in St. Louis and Nob Hill in San Francisco.

We had to make a fresh start. We sent scouts to Paris to find out what to do. Hunt came back and showed us what he had learned and we took it meekly. Then Richardson came back and his romantic gusto captivated our imaginations so that scarcely a city or town in the country remained content without some feudally massive monument in the Romanesque manner which Richardson in the short span of fifteen years had convinced us was the style which became us best. A little later McKim and Stanford White, being more delicately minded, set out a new line of samples which appealed strongly to the growing group of cognoscenti who had felt the charm of Italy, and who could never stop talking of Botticelli and Leonardo de Vinci and Bramante and Fra Lippo Lippi. Everybody who was anybody was reading Browning then; and Browning had nothing to say about the Romanesque glories of Southern France and Spain. So Richardson was forgotten almost the day after he died, and Boston which had paid him the most abject homage turned to McKim for the design of its new public library.

Out in the west Burnham and Jenney were grappling with the new problem of the tall office building, looking back over their shoulders toward the east for inspiration, but manifesting a little western independence at the same time. Their independence was as nothing however to the knightly iconoclasm of Louis Sullivan who early sensed the futility of trying to apply European motifs, no matter how beautiful in themselves, to the new problems confronting us. But neither Burnham's effort at logic in the Monadnock, nor Sullivan's emphasis of the importance of the pier could prevail against the scholarly quotations from the masters of the Cinquecento which McKim, Meade & White were repeating to the ever increasing delight of the well bred. Architecture was becoming something to be talked about.

Affluent clients demanded that their affluence be affluently expressed, and Hunt, turning his back on the dogmas of the Ecole de Beaux Arts, to which he had formerly seemed piously loyal, found in another phase of the Renaissance, the style of Francois Premier, those rich and corruscating details which he incorporated in the palaces of our American royalty. Thus was the cauldron bubbling during the fifteen or twenty years between the great fire and the great fair.

Whether or not the Columbian Exposition of 1892 helped or hindered the orderly development of the art of architecture in this country is a moot question. The free-thinkers shudder at the thought of it. Their

most valiant spokesman, Louis Sullivan, had a part in it and made a considerable impression with his Transportation building, but the conservatives had overwhelmingly the best of it; and the White City with its mile upon mile of colonnaded facades, with its podiums and porticoes and peristyles made an impression of imperial grandeur which could not but be alluring to a great people beginning to feel its oats. McKim and Atwood carried off the blue ribbons. Atwood indicated to his eager and naive countrymen something of what the poet meant by the glory that was Greece. But McKim sensed the national temperament more accurately by revealing something like the grandeur that was Rome.

If architecture, before the exposition had become something to talk about, it now quickly became a matter of common gossip. There was magic in the world. The White City had vanished, but it lingered in men's memories as the Magic City. Our taste for columns, clean round columns, could not be satisfied. We clamored for columns and more columns as though they were sticks of candy. Financiers liked them particularly, and railroad presidents, and statesmen. And of course, with columns went entablatures, rich friezes, and richer cornices. Every important palace in Italy was reproduced either on Fifth Avenue or the quieter side streets. Our banks became stately temples. Our post offices and libraries became more Roman than Rome ever was in its palmiest days.

Our young men flocked to the few established schools of architecture like Technology and Columbia to study the orders. Vignola and Palladio were names on everybody's lips. And then boatloads of novitiates sped to Paris to study planning. At the Ecole they were somewhat disillusioned and made to feel a little ashamed of their purity. So when they returned they were very French indeed, as the word was understood in the late nineties. They designed in the current Parisian idiom as Hunt had done in his time. They became virtuosos of the Cartouche and the Vermiculated Voussoir. They foregathered at Martin's where everybody spoke French and "flaneured" along Fifth Avenue as though they were on the Boul Mich.

Paris held an exposition at about this time and the new classicism of the Grand Palais, the Petit Palais and the Bridge of Alexander III became the vogue of the moment. There was a tincture of modernism in all this newer French detail that appealed to these young men already in revolt against the too slavish imitation of ancient forms. Architectural phrases caught from these new masterpieces were repeated ad nauseum for the next five years. Cartouches became simpler. Sometimes they were plain eliptical blocks with stiff garlands hanging over them. Links of stony tulips exuded from orifices as though some interior pressure had forced them through. This was all very well for the French if they liked it, but we weren't really French and we soon tired of it and began to

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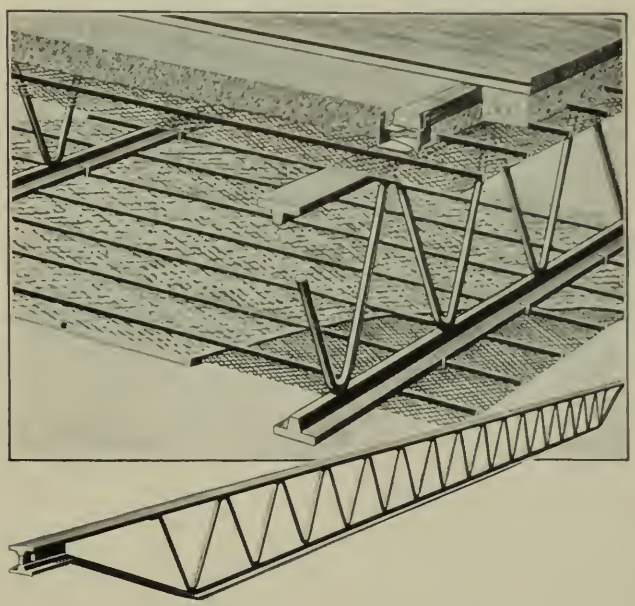

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look around for something else to quote. We were out to test, to try, to grab anything that would fit. We became conscious of something coarse and vulgar in the French taste for we were Puritans at heart. Our pedantic classicism began to cloy too. It all seemed too pompous and grandiose and stodgy. Even the Puritan may have his Romantic moments which need to be ministered to.

In Philadelphia where the blackest night had reigned throughout the entire Victorian epoch, a little group of Romanticists had already broken a few lances for the honor of Merrie England. Wilson Eyre, Frank Miles Day, Walter Cope and John Stewardson thought of architecture in the domestic terms of the Cotswold Cottage, the Elizabethan Manor House, and "the decent church that topped the neighboring hill." Bertram Goodhue, fleeing from the monumental hurly burly of New York, had found a quieter niche in Boston, where Ralph Adams Cram had begun to preach the virtues of the good Mediaeval life to an audience descended from the yeomanry of Shakespeare's time. Goodhue's drawings and Cram's eloquence charmed us and stimulated our latent love of the picturesque. Rural England seemed idyllic as we reacted from the sophistication of the Champs Elysses and the somber dignity of Rome.

Our educational leaders, with the eager hospitality for half-truths so characteristic of human nature, became enraptured by the glamor of the mediaeval tradition and ordered their new college buildings to be designed in the style now familiarly known as Collegiate Gothic, because the universities of Oxford and Cambridge, though not those of Salamanca, or Heidelberg, or Padua, had been so designed. Thus after an eclipse of five hundred years, during which a hopeful world had congratulated itself upon the fact that it was done with feudalism, done with monasticism forever, we were treated to an actual vision of the resurrection.

The last few years are too near for us to be very coherent about them, if indeed there has been much coherence in them. They have been years of searching, years of pillage, years of architectural rapine. The panorama which we set ourselves to envisage imaginatively has been reconstructed in solid substance within the borders of our forty-eight states. Not content alone to concern ourselves with the highways, we have reproduced the architecture of the by-ways too. If many races have been fused in the making of America, the architecture of many races has been transplanted, if not fused, to safeguard the American citizen against home-sickness for the scenes of his ancestors. Greece, Rome, the Italy of the Medicis, the France of every dynasty from Charlemagne to Poincare, the England of eight hundred years from William the Conqueror to George IV (we refrain from again mentioning Victoria), the Spain of the Moors, of Ferdinand and Isabella, and the four Philips, nothing since. A dili-

gent student may make the grand tour of Europe and familiarize himself with the culture of a dozen races throughout a period of two thousand years without a passport, without even a twinge of seasickness.

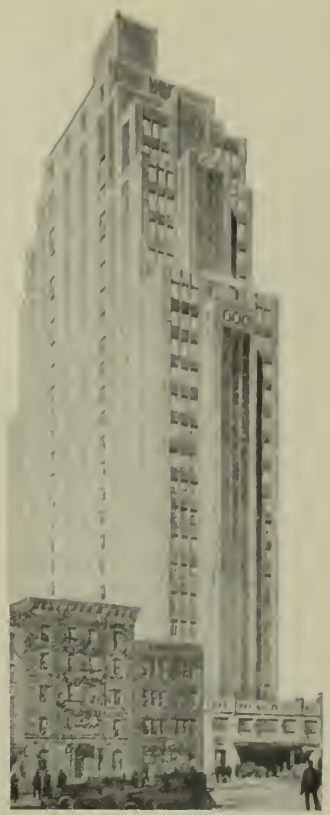
This is the architecture of America, but what of American architecture? What do our flattering critics mean when they proclaim that we lead the world in this most vital of all the arts? Do they mean that our Georgian houses are better than Georgian houses ever were, that our Normandy manors are more redolent of Normandy, our Cotswold cottages more utterly charming or our Spanish farm houses more typically Spanish than their prototypes? No, they cannot mean this. Our Gothic churches cannot be better than the Gothic of the Isle de France, our temples, or rather our templed memorials or counting houses, cannot exceed the perfection of the Parthenon. They must mean something else. They must see in our factories, in our skyscrapers, something they have never seen before, something that has suffered a deep change, and taken on the aspect of its environment. They must mean your Chicago towers and Manhattan's pinnacles and cliffs of masonry.

We know that vastness and bulk, volume and height are attributes to conjure with. We know that these things cause the beholder to draw his breath almost to make his reason to totter. We have had some practice in managing them which less prosperous, less dauntless people have not enjoyed. And yet in the very handling of these American (if you choose to call them so) masses, are we not still straining our eyes toward Europe for suggestions? We talk now of modernism, we speak with disdain even of the past of yesterday, and there is health in this, but let us be humble for a while yet until we can be quite sure that the modernism we strive for is inherent in our own character. To borrow it from Sweden, from Germany, from Holland or from France will be but to continue our incorrigible habits of plagiarism.

As moderns, we need offer no apology for being modern. It may be our misfortune, but it can hardly be said to be our fault. We were born too late to be anything else and it is really to our credit that we are more willing each day to admit the dreadful fact. We share our modernism too with our contemporaries the world over. Can it be that, though we supposedly live at a more accelerated pace than our European contemporaries, they have a clearer sense of the present and the immediate future than we?

It seems to me that I remember a period when you Illinois architects and particularly you Chicago architects were beginning to formulate a distinctly American vernacular. It might be invidious to mention names, but you all know the men I have reference to and must respect the work they did. Much of if had a noticeable tang and while it wouldn't be called modern now, as we understand that term, there was fresh-

Where They Park Cars in the Clouds



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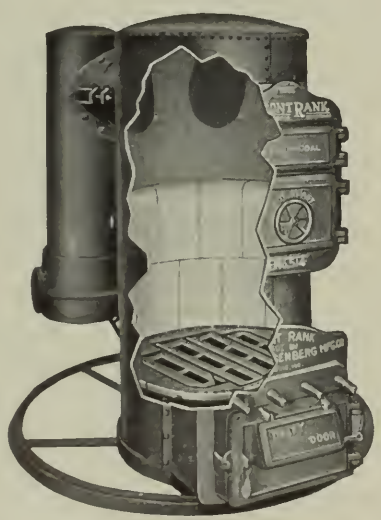

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ness and virility and logic in it. And personality, which should not be confounded with mannerism. To be different just for the sake of being different, simply to attract attention is vain, and not in the nicest taste to say the least. I suspect that this form of vanity is partly responsible at least for our confusion of styles. But the personal touch which some of you had, maybe I should say have still, is quite another and a very praiseworthy thing.

If our old stodgy habits are changing, if we are beginning to detect a new crispness and terseness, a new simplicity and directness in the design of our little buildings, as well as our big ones, we may seek for the cause in two factors. First, we are living in a crisper, smarter, speedier time; and second, client and architect are more nearly one and the same than they ever were before.

The young architect of today feels and reflects the tempo of his generation. As in dress, for instance, in feminine dress particularly, yards and yards of hampering fabric, which an outworn tradition had sanctified, have been stripped off; as manners, and music, and even morals are tending more to the point each decade, each year almost, so our architecture is stripping itself of much of the historic impedimenta which clogs and hampers its natural purpose.

Architecture is an art that above all others is founded on realism, on sincerity. Our past history might indicate that we have been rather flippant in our attitude toward it. Art is something more than the feather in an Alpine hat or the gold braid on an admiral's sleeve. If we are to regard modernism as just another fashion to be played with, as something that is going to be the rage like all the other rages, we will continue to be fashion mongers rather than architects, false to our opportunities and our obligations. As a plagiarist with a bad conscience, but an earnest desire to reform, I would say to my fellow architects, having full faith in the essential virtue of the American character—Be yourselves.

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E. I. Rodgers, for thirteen years Sales Promotion Manager of The Builder's Exhibit in San Francisco, has terminated his connection with this concern to represent several nationally prominent manufacturers of building materials and equipment. Mr. Rodger's extensive and intimate relations with Pacific Coast architects and building professionals and his broad knowledge of building conditions and materials, place him in an enviable position to cater not only to the needs of construction people, but the manufacturers as well.

STOCKTON APARTMENTS

The Eden Square Apartments in Stockton were destroyed by fire recently. Joseph Losekann has been commissioned to prepare plans for a new building to cost $350,000.

BOOK REVIEWS

By Edgar A. Kerulff

LOS ANGELES ANNUAL BUILDERS GUIDE, Volume 8 (A Handbook for Architects and Builders). Published by the Inter-state Educational Association, A. C. Hoff, General Manager, 726 Story Bldg., Los Angeles. Prices—Regular edition, $8.00; De Lux Edition, $12.00.

This new eighth volume of the Los Angeles Builders Guide carries out the excellent tradition and sustains the reputation of being one of the most complete and authentic building guides in the west. The contents includes: Building ordinances; Los Angeles electrical ordinances; California State Housing Act, completely indexed; special technical articles and subsidiary ordinances; building materials; building appliances; a list of contractors and sub-contractors all well indexed and classified.

HEATING RATES—Condensed and Tabulated. Compiled by the Ric-wiL Company, Union Trust Building, Cleveland. Ohio.

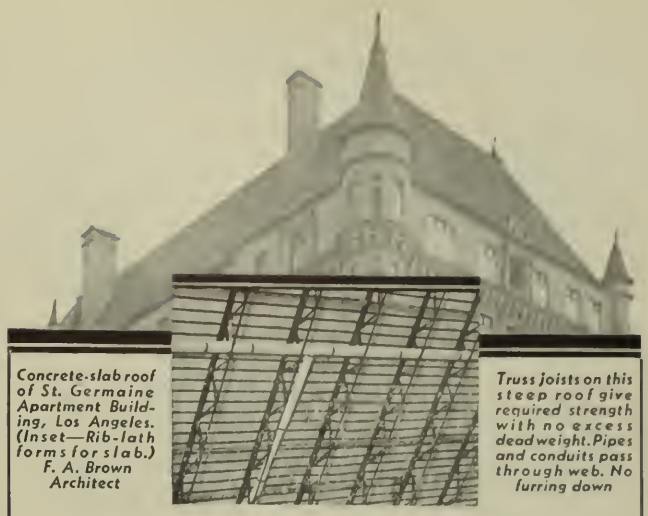
This booklet may be obtained by writing to the above address. It contains the heating rates (steam and hot water) of important towns and cities in the United States. A comprehensive check list of heating rates and data which should be useful to heating engineers, contractors and architects.

PERSPECTIVE PROJECTIONS (A simple and exact method of making perspective drawings) By Ernest Irving Freese. Published by the Pencil Points Press, 1930, New York.

A valuable book for the student draftsman and a handy reference volume for the drafting room library. It covers straight line figures, curved line figures, expedients, domes and drafting room practice. There are ten actual examples of the author's work at the back of the book illustrating his particular method of "perspective projections". These are well drawn and indicate and examplify a simple and effective method of pen rendering.

DESIGNING—HEATING AND VENTILATING SYSTEMS, By Charles A. Fuller. Third edition revised. Published by the Scientific Book Corporation, 15 East 26th St., New York City. Price $3.00 net.

A revised and enlarged edition which has been adapted for use as a textbook for colleges and schools and as a reference book for engineers and architects. It embraces from a practical standpoint, chapters on heating and ventilating systems for all types of buildings. The theory of heating and ventilating has been handled so as to eliminate as far as possible the usual difficult mathematical computations. There are thirty-five chapters, well designed drawings, tables and index.



Concrete-slab roof of St. Germaine Apartment Building, Los Angeles. (Inset—Rib-lath forms for slab.) F. A. Brown Architect

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THINKS ORDINANCE AMBIGUOUS

Editor ARCHITECT AND ENGINEER,
San Francisco:—

On page 104 of the January issue of THE ARCHITECT AND ENGINEER there are quotations from a proposed ordinance limiting the height of buildings near Los Angeles.

May I suggest that before the ordinance is finally passed it would be well, in the interests of those who will be governed by it, to re-write the paragraphs you quote, with an eye to clarity. The Commission, of course, has clearly in mind what they propose, but a casual reading would leave an ordinary person somewhat confused. It seems to me a matter of considerable importance that a law be explicit: subject to but one interpretation; and so clearly worded that it can be easily read and understood. And in dealing with so commonplace a matter as a building height limit there can surely be no reason for confusion. It is merely a matter of taking pains.

Really, I have no wish to quibble, but in the first paragraph quoted there is this: "—the cubical content of which exceeds 125 times the area of the site—". Of course, it is easy to see what they are driving at, but let me assure the Commission that there never yet was a multiplier that would automatically turn square feet into cubic feet.

But of some real importance, or so it seems to me,

ANNOUNCING

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is the use of the word "site". What is the site of a building? Webster defines it, generally speaking, as "the place where a thing is". From that, it would seem to be the area occupied by the ground floor of the building. But the following paragraphs seem to indicate that the writer means the lot on which the building is to be erected. But what lot? If one owner has title to an entire block and the building is to occupy only a small part of the land, what is meant by the site? Further along: "That where a dedicated alley exists—". Many alleys exist: I have one back of my house, shall we measure from that? And so on throughout the ordinance.

The above may sound like quibbling; petty fault finding. But my object is only to call attention to a common laxity in law making. One sees much of it. And may I add that the cost of the time and energy spent afterward in ironing out uncertainties would pay, a thousand times over, for the time and labor and care needed to remove them in the first place.

Yours very truly,

CHAS. E. BEUGLER, C. E., Oakland, Cal.

ENGINEERS MAKE PROTEST

The American Engineering Council, of which Carl E. Grunsky of San Francisco is president, voiced a protest against the soliciting of bids from engineers by cities and corporations.

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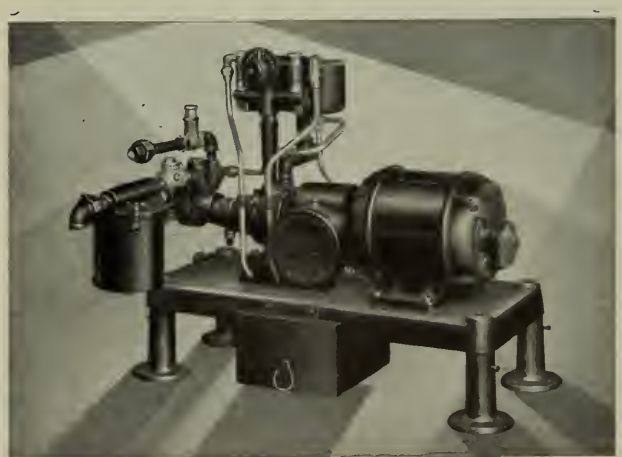

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PERSONAL PUBLICITY

By ABRAM GARFIELD

This well-prepared statement on the subject of personal publicity was considered by the A. I. A. Board of Directors at a recent meeting and was endorsed.

THE question of how to bring about personal publicity begins to stir in the mind of almost every architect as soon as he finds himself running out of work. He starts by resenting the old-fashioned dictum which said that it was unprofessional to do other than sit in one's office and wait for work to come, and very soon he charges the Institute and particularly its older and presumably successful members with a desire to force this principle upon the younger and still striving architects. Having satisfied himself that this curious idea expresses truly the intentions toward himself of those who have made the rules in the Institute he sets about planning what he would like to do to correct the situation. He wants publicity and although he may accept the idea that this publicity is for all architects, for architecture, what he really wants is personal publicity, and in this he is unquestionably right.

It is perfectly proper and even desirable that the architect should wish for and strive for personal publicity. If that is granted it is possible to discuss the subject without having to define what is dignified and what is undignified, and the subject may be approached from the standpoint of what is useful and what is fair—with a better chance of understanding.

The architect who is seeking publicity and believes that it is useful to advertise should study the subject as he would any other business venture. If it seems to some that they have a little hesitation about seeing their names in the magazines or papers stating that they are architects, and this is not a very startling thing for the public to read, they may be assured that they will become used to it. Any new thing becomes customary with surprising ease.

Let us suppose that we do become used to it, what good will it do? Let us assume that the Institute sends out to its members a notice saying, "It is advised that architects may and should advertise." The local papers, the trade journals and magazines having to do with small houses and bungalows will soon get wind of this policy and will make its application easy for us. We will not have to go to them because they will come to us, willingly and eagerly, because the financial return to them is positive and so much per inch. When they have succeeded in getting all of our names, it will be a list corresponding exactly to the classified directory having to do with architects. Does it occur to any architect that he will be anything ahead? One suspects that this plan is not the one he has in mind. Really and truly the thing he wanted when he announced that he wished to advertise was that he wanted to be the only architect in his town who did so.

I doubt if this is unfair. No one would state his desire in precisely those words but please consider the probable consequence if all of us begin to advertise. Very soon some paper or advertising agency will suggest to the architect some new and startling innovation to make his display more distinctive and, not unnaturally, at a larger price. There is no need in pursuing the subject along this line because the story of our struggle for publicity will be clear to anyone who happens to read this. We will be led into greater and greater expense and the architect who wants to be the only one will have to be very ingenious in thinking up new displays. If he succeeds he will be alone for perhaps a week and then the others will follow. Our business will be loaded with a new and serious expense and the magazines and papers will be delighted. Certain great offices will employ expert agencies and finally one of our more successful offices will be found represented among other great advertisers in the weekly magazines of a million subscribers.

One valuable indication of progress in 1930 which will surely carry on in 1931 is the improvement that has been made in small house design. This can be realized by anyone who compares the houses that were built only ten years ago with those being built today. The credit for this forward step is due to those competent men in the architectural world who have interested themselves in this field of design. Twenty years ago we were building expensive country mansions of Tudor, or French, or Italian design, and small houses in imitation of the great ones. Nowadays we are building excellent six-room cottages, charming in design and material, more or less original in character and at a modest price. Much has been accomplished by the publicity given by the new "Small Home" magazines, the small-home exhibitions and the work of groups of philanthrophic architects working in the Small House Service Bureaus. The year 1931 will surely add to the growing sentiment that a good home is not just a good house well and handsomely built. We have realized that group action is necessary. We know now that we must create neighborhoods, communities even, in order to give the right environment to a home. There are many experiments in this direction under way now but the torchbearer for the moment is Radburn, the new "town for the Motor Age," about thirty miles from New York.

Finally in the world of architecture and building, 1930 has shown and 1931 will undoubtedly show to a greater extent, a growing consciousness of the interdependence between thinkers and workers in the building industry. In our inchoate and drifting democracy, there seems to me to be no hope of progress except through a clearer realization of functional interdependence and this realization is rapidly making headway in the building world in the United States. Our artistic progress can move along with certainty only when

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it stands on a solid basis of right relationship between the many essential elements that go into the process of designing and constructing a building.

This pronouncement of the Committee on Practice is urging the desirability of personal publicity, but how in the world is it to be achieved by the method that has been outlined above and which some architects believe to be exactly the right method? It does not do to point to the universal system of advertising because it has apparently worked so well and to suppose that we can do the same thing easily or inexpensively. Advertising is a difficult venture and requires an exhaustive study before one can hope for any degree of success. It is possible to hazard that a large percentage of small advertisers in regular business throw away their money.

After all, what have we got to advertise? This question takes one into the realm of what is dignified and a promise was made to avoid that subject. It is, however, stimulating to a little thought. If we have an equipment or a thing to advertise it is not hard to state the facts. If, on the other hand, we have a personal service — our own personality — to advertise, it has always been found difficult to do this gracefully.

There is another form of advertising which was somewhat useful so long as it was uncommon. This is the monograph illustrating the work of an individual architect. It is convenient and may well be described as useful except that it has become so common that it has lost some of its novelty. The objection to this form of advertising is based upon the second test which was set out. Advertising to prove its desirability should be useful and it should be fair. Advertising in a magazine or paper is fair, even though it is not useful, because it is paid for. The monograph has been in some cases very useful but in most cases it is not paid for and is, therefore, not fair.

If the work of an architect is of such a high order and of such universal interest that a publisher believes he can publish this work and sell it to an interested public and without the financial reinforcement of advertising matter, no one can possibly object. The publication of one's work in the architectural magazines of widespread circulation may not be criticized even though these magazines are supported by advertising because the work of many other architects is published at the same time. If, on the other hand, the work of one architect is arranged in a monograph and if this work does not encourage the publisher to believe that he can sell the book to the public, he must either make up the deficit from the architect or from advertisers. If he makes up the deficit from the architect—in other words, if the architect pays for this useful and convenient thing—no one may criticize him. If the publisher makes up the deficit from advertisers—material and equipment companies and contractors—these companies and contractors are paying for this useful and convenient monograph.

If it can be proved that these advertisers receive a return for their subscription equivalent to their outlay; if it can be proved that the advertisers make this investment willingly and even seek to do so, it may be said, fairly, that the architect is not beholden to them in any way. The publishing house which urges the architect to let it publish his work assures him that this is the case. Many architects knowing the view of the Institute upon this subject, take great care to tell the publishing house that they will not give any assistance towards obtaining the advertising matter and will not allow pressure to be brought upon the contractors and equipment men. They do, very often, furnish the publishing house with a list of names. The architect then washes his hands.

The Committee on Practice has observed these practices through several years and has heard, from time to time, complaints from material men that they resent the methods of the publishing houses when presenting their contracts for advertising. These material men are told that they stand a good chance of appearing unfriendly to the architect and to the profession. To whatever extent this is the case, pressure has been brought to bear. This committee has made many inquiries and it has yet to find a single case where the advertiser has considered that his page or half page in a monograph has any money value. This can hardly be surprising because it is well known that advertisers estimate the worth of space very exactly upon the number of paid subscribers to the paper or magazine. It follows that the value of space in a monograph which is not for sale is exactly nothing. If this view of the monograph is correct, the architect who allows his work to be published in a book supported by advertising is receiving something for nothing and his policy of bringing about personal publicity for himself may be useful but it is not fair.

The Institute repeats that the desire for publicity is natural and proper but calls attention to the common error of confusing cause with effect. Achievement and success will bring about this desirable personal publicity but personal publicity may hardly be depended upon to bring about achievement and success.

ARCHITECTURAL LEAGUE EXHIBITION

Raymond N. Hood, F. A. I. A., President of the Architectural League of New York, announces particulars of the Forty-sixth annual exhibition of the League to be held in New York in the spring.

The essentials are covered in the following paragraphs:

For specific information on other points, communications may be addressed to Mr. Hood at 115 East 40th Street, New York City.

Last day for return of entry slips—Monday, March 16, 1931, at 115 East 40th Street, New York City.

Only day for the reception of exhibits—Wednesday,

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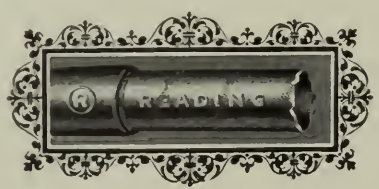

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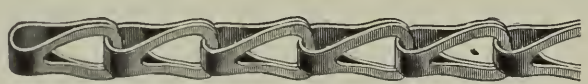

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April 1, 1931, 9 A. M. to 5 P. M.—at Grand Central Palace.

Press View—Saturday, April 18, 10 A. M. to 12 M.

Opening—Saturday, April 18, at 2 P. M.

Public Exhibition—Saturday, April 18 to April 23, inclusive.

Exhibits discharged—Monday, April 27, 9 A. M. to 5 P. M.

The exhibition is illustrative of architecture and the allied arts. It will consist of drawings and models of proposed or executed work in structural, decorative and landscape architecture; sketches and finished examples of decorative painting; sketches, models and finished examples of decorative and monumental sculpture, drawings, models and executed work in the decorative arts; and photographs of executed work in any of the above branches; it being understood that full-size portrait studies are not eligible unless especially solicited by the Jury of Selection.

The exhibition committee proposes several departures from the customary procedure in previous League exhibitions. It requests that as far as may be possible, exhibits of architecture be restricted to frames or mounts not exceeding 66 inches in height. The photographs would preferably be of a warm grey color, likewise any mats. In painting and sculpture the committee desires studies, preliminary work of any nature that may present to the public a general picture of current work in these arts.

Plans are particularly desirable—but unless they are well presented they may fail of acceptance. The committee solicits correspondence with exhibitors wishing to send drawings with models and cartoons illustrating in combination the architectural, sculptural and decorative scheme of a single important work.

No exhibit may be offered for sale during the exhibition. The entry fee is $5.

Unless otherwise specially agreed, the League will not be responsible for the loss of, or any damage to, any of the exhibits arising from any cause whatsoever during carriage or while in its custody. All exhibits must be delivered prepaid by the exhibitors at the Galleries on April 1st and removed at their expense on April 27th, 1931.

ARCHITECTS VIEW DAM SITE

A party of Pasadena and Los Angeles architects recently inspected the site of the proposed Boulder Dam. M. P. Lewis, engineer in charge of the cost division of the Los Angeles Water Bureau, conducted the party, which was composed of Messrs. S. B. Marston, J. C. Wheeler, F. M. Hubler, S. J. Blacker, F. H. Haskell, David J. Witmer, William Larson, Palmer Sabin, F. A. Vigers, G. P. Hales, M. L. Barker, Geo. J. Lind, A. H. Crawford, J. J. Moore, Albert C. Martin, Carl Hire, Palmer Hargrave, Wm. B. Hargrave, A. R. Arledge, Chas. Lewis, R. E. Ballinger, J. L. Williams and E. L. Phillips.

AN ADDRESS TO THE PRODUCERS

By Charles D. Maginnis, F.A.I.A., in *The Octagon*

YOU are probably prone to think of the architect as an impervious, self-centered sort of person. Time was when the world did not have to bear with him, when the architect, as we know him, did not exist. It was a great time and they say it it was happy. In the democracy of the medieval guild he was merely the master builder in a company of craftsmen. The guild was an artistic and economic unit, comprising all the instrumentalities necessary to the building. The materials employed were usually of the place. With these conditions, the architecture obviously became highly expressive and significant. It had the intimacy of the vernacular. The great art of the past grew from such geographical isolations, for the old world was largely a static world.

With the end of the Gothic order began the gradual divorce of the architect from the crafts and the development of architecture as an independent profession. The estrangement was a long process, for the crafts still survived but with less and less of their historic independence. The dominion of the architect over all the interests of the building became in course of time only too definitely established. Presently there came the machine bringing the seed of industrial and, as we now perceive, artistic revolution. Its intrusion was fought bitterly as of an evil and unspiritual competitor. William Morris and Burne Jones, with the zeal of the apostles, rallied English sentiment against it. And you remember the passion of our own Fra Elbertus at the beginning of the century. This spirit of protest still lives fitfully in the Arts and Crafts societies. The machine, it was feared, would crush out the personality of the worker. By which was meant the loss of that vital touch of warm human fingers which will be a reverend principle to the end of time. It was a small view of personality, which is no less a factor in art than it ever was. But we have come to look on personality as something not confined within a too definite radius from one's hat. Behind the machine will ever be discerned the controlling and directing human intelligence. Science has been beneficient and has merely given to man's hands more resourceful instrumentalities. We look wistfully, notwithstanding, on the thinning ranks of the old craftsmen who are compelled to a dependence on the sympathetic patronage of the churchman and the conservative.

Meantime, the architect has become more and more isolated. Modern invention supplies new materials, but it is the architect alone who must dramatize them. This is not your fault—it is conceivably our own. But a larger faculty for co-operation with him than now appears must be created if we are to offset the loss of the craftsman of tradition.

Manufacturers have done little to reveal the artistic potentialities of their product. Only the merest pre-

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Many existing heating systems can be converted to Differential operation at moderate cost. These change-overs will pay for themselves. Dunham engineers will survey present systems without obligation.

tense of doing so is indicated by the presence of a draughting room in a remote corner of the works, where a group of dull and unimaginative talents do a commonplace and perfunctory service.

Only from a very few sources can one secure examples of distinguished and independent craftsmanship for our building outside the purely artistic crafts. The electric fixture has been intelligently studied; also the appointments of plumbing. Hardware calls for more interesting and original design. The needs of the ecclesiastical architect are largely neglected, and he searches long, for instance, for a fabric to fit decently in a Gothic reredos. I have met many men who deal in marble, but only one or two who know anything of its tremendous decorative adaptabilities. One encounters talent in the bronze industry, but, except for an outstanding man here and there, largely dullness in the case of the other metals. Nor does it begin to dispose of the matter to say that the essays of the architects themselves in these fields are not always impressive. The situation is larger than that. We are now at the threshold of a new architectural era. Science and Art, having had a pontifical sort of acquaintance through the years, now sit elbow to elbow in shirt-sleeves. The new artistic philosophy of today is definitely oriented to your interest. You are curious, I know, how to bring this interest into helpful and profitable association with our profession. Of the sympathetic co-operation of The American Institute of Architects in this purpose, you are already well assured. True, we have not yet considered the specific means by which co-operation may be brought about. I was about to speak of it as a problem. In Indiana the other night, however, I heard Chesterton say that we are disposed to make a problem of everything nowadays, the more easily to excuse ourselves for not settling it. Your interest, so far as it is also the interest of the architect, seems to me to lie in the restoration of that intimate and democratic contact between architecture and the crafts at the highest measure of its historic functioning. It can be accomplished. This means the exploitation of your various products through the enlistment of imaginative, highly trained men of the technical schools. Till now, those

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accomplished men have gone to recruit our offices. Many of them should be deflected to yours, where they may study the genius of your materials, create responsible standards of design and workmanship, interpret for you the processes of the professional mind and by these means develop that instant responsiveness which, in the swift tempo of the modern world, is no less important to the producer than to the architect. Great changes in manners, methods and materials are indicated by the modernistic movement which is just begun. It is time for thoughtful readjustment of the capacities which reside in such a body as yours. Behind this new movement is a conviction which is big in promise for the secular architecture of the nation. It is to be for long an architecture of experiment. Your co-operation in it must be large and it may be stimulating. The challenge it contains for you, however, is clear and unmistakable. By meeting it adequately, you may render an honorable and lasting service to the art of America.

AFTER UNLICENSED CONTRACTORS

The State Registrar of Contractors has commenced action in Sacramento against all unlicensed contractors.

A Sacramento contractor without a license started suit against an owner over a disputed bill which included extras. A Sacramento judge ruled in favor of the owner as the contractor was not competent to file suit without a license.

The low bidder on a school job recently was unlicensed at the time his bid was submitted. His bid was rejected as he was not qualified to bid. Similar cases in other parts of the state have resulted in the rejection of bids of unlicensed contractors.

Registrar of Contractors may be asked to take action in cases of sub-contractors and material men who do work for or sell to unlicensed contractors. The state law provides penalties for those who aid and abet violation of the law as it does for those who break the law. Selling to unlicensed operators may be construed to include material dealers and sub-contractors under the aiding and abeting clause.

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ARCHITECTS NAMED

Six architects have been commissioned by Director of Public Works Garrison to draw plans and specifications for work on as many State institutions at a total cost of $1,110,000.

The Legislature passed twenty-nine urgency measures which were signed by Governor Rolph providing more than $5,000,000 for this institutional work. It was then decided to call in reputable architects located in various parts of the State to assist the Division of Architects in carrying on the rush work.

F. H. Meyer, San Francisco, was commissioned to draw plans for a $500,000 hospital at the Veterans Home, Yountville.

W. H. Wheeler, San Diego, is to draw plans for a gymnasium and swimming pool, costing about $205,000, at the San Diego State Teachers' College.

Schwartz & Ryland, Fresno, will draw plans for a library building at the Fresno State Teachers' College, costing about $115,000.

Peter Sala, Stockton, is to draw plans for a kitchen and other units at the Stockton State Hospital, the additions estimated to cost $65,000.

R. G. de Lappe, Modesto, with offices in Oakland, is to draw plans for a dairy at the Preston School of Industry at Ione, estimated cost of structure $60,000.

Franklin Jorgenson, Eureka, is to draw plans for a training school at the Humboldt State Teachers' College, estimated cost $170,000.

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BAY BRIDGE ASSURED

Virtually the last obstacle in the way of the San Francisco-Alameda county bay bridge has been overcome.

Secretary of the Navy, Charles Francis Adams has notified Congress that his department has no objection to construction of the bridge from Rincon Hill to the Key Route Mole, by way of Yerba Buena Island.

The Navy's acquiesence is practically certain to result in the War Department's approval of the Kahn bill for construction of the bridge, authorities pointed out.

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SKYSCRAPER LIMIT

Skyscrapers have got about as far toward the moon as they are likely to go for some time.

Prediction that no greater altitudes for high business structures will be demanded was recently made by W. A. Starrett of New York, the man who built the Empire State Building in that city, the highest office pile in the world—1250 feet from sidewalk to the top of its dirigible mast.

"San Francisco has some of the finest office buildings in the world," said Starrett. "And there seems to be no reason why they shouldn't keep on going as much higher as the people desire."

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SAN JOSE RESIDENCE

Ralph Wycoff, architect of San Jose, is at work on plans for a ten-room, two-story frame and plaster residence, with basement garage, at an approximate cost of $20,000. Dr. E. P. Cook, 201 South 8th Street, is the owner.

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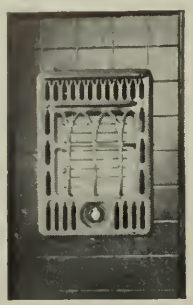

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STRUCTURAL ENGINEERING

(From Bulletin of the Structural Engineers Society of New York)

What Is Structural Engineering?

Structural engineering for buildings embraces the designing of the foundations that support the structure, the retaining walls that enclose the basement and other sub-grade items. It includes all of the structural frame which consists of columns, girders, beams, trusses and lintels, floor and roof construction, and other supporting parts.

The Function of the structural frame and foundations is to support itself, all of the other parts of the buildings, and the people who occupy it and its movable contents. In addition, it resists the forces of the winds and earthquakes, provides safety to life and protection to property.

The Structural Engineer so designs the structural frame that it is suitable also for architectural requirements of plan arrangement, enclosing walls and embellishment, and conforms to the requirements for heating, ventilating, sanitation, illumination, and elevatoring. In other words the structural engineer is the "policeman" who provides for public safety in buildings.

To Provide these engineering services the structural engineer must possess a thorough knowledge of the science, having a comprehensive and practical experience in all of its phases, and assume the obligations and responsibilities for all of the hazards and economies involved.

Building Contruction comprehends many diverse elements which are classified into two groups; designing-planning and constructing. The designing-planning group includes the architect, the several kinds of engineers and the interior architect. The degree of their importance and responsibility varies with the character and type of the structure—it is universally acknowledged that each one contributes a necessary and essential service.

It Is Characteristic of the structural elements of a building that they are concealed in the completed struc-

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ture and that the real work of the structural engineer is invisible and generally unknown with the corresponding psychological effect that his service is not generally and correctly appraised.

On the Other Hand, all of the enclosing walls, interior partitions and finish, and equipment of every kind can be removed from the structure and there still remains the unchanged structural frame, floors and roof. New plan arrangements of partitions and finish and equipment can be installed, new enclosing walls constructed and the building used for the original or another kind of occupancy —a new building in effect except for the sturdy structural frame, the *elan vital* of all building.

It Is Apparent that as each professional element contributes a valuable service to building industry and that as each one has a natural and reasonable interest in its own welfare and prosperity, it must have a correspondingly inescapable interest in the welfare and prosperity of the others. Not one of them, including the architect, can afford to stand aloof and follow an attempted unrelated and detached course with any success. It is but reasonable and sensible that each professional group should seek to initiate and maintain correct relations within itself and with the others in order that it can conserve and increase its own professional standing and prosperity.

STATE BOARD ACTIVE

Announcement is made at Sacramento that a vigorous campaign will be made by the State Board of Architectural Examiners against persons practicing architecture without a license. A draftsman at Santa Rosa was fined $50 for violation of the law and two other prosecutions are pending. At the close of 1930 there were 668 licensed architects in Southern California and 516 in Northern California.

An exhibit of architectural renderings by Robert Lockwood of Los Angeles is being shown in the Faulkner Memorial art wing of the public library at Santa Barbara.

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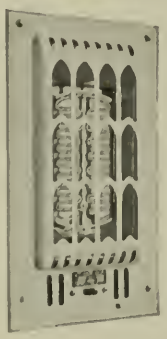

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ARCHITECTURAL EXHIBITION

The annual architectural exhibition, featuring the work of Southern California architects, will be held at the Building Material Exhibit, Fifth and Figueroa Streets, Los Angeles, from March 1st to 14th. It is under the auspices of the following:

State Association of Architects
Architectural Club of Los Angeles.
Architects' League of Hollywood.
Architectural Club of Long Beach.
Certificated Architects of Beverly Hills.
San Diego Chapter, A.I.A.
Santa Barbara Chapter, A.I.A.

COAST REPRESENTATIVE

Charles Ingram of San Francisco, who has been connected with the building industry for many years, has been appointed Pacific Coast representative for W. J. Dennis & Company of Chicago, manufacturers of metal weatherstripping and kindred lines.

CERTIFICATE GRANTED

At a meeting of the California State Board of Architectural Examiners January 27th, a provisional certificate was issued to Romualdo Jose Blas, 251 Kearny Street, San Francisco.

EXHIBIT OF WORK

An exhibit of architectural work by the members of the Architects' League of Hollywood has been placed in the building material exhibit rooms on La Brea Avenue, near Beverly Boulevard, Los Angeles.

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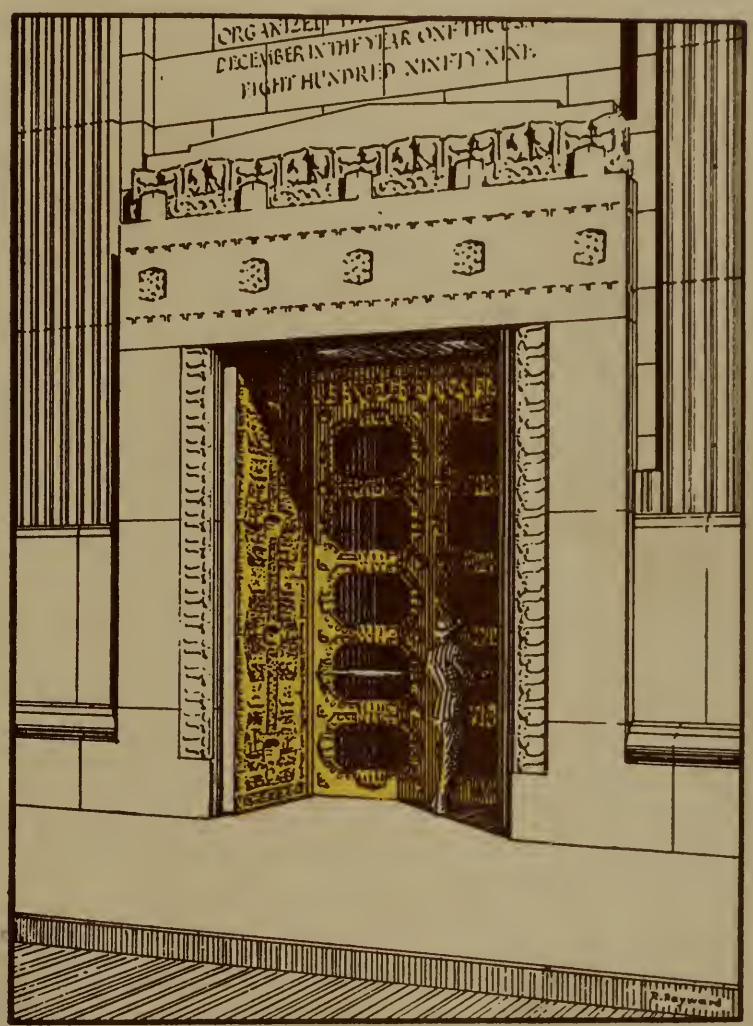

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"SLIM MARTIN'S graphic story of the structural steel worker, printed in this issue from *New Masses,* will thrill the reader and at the same time impress him with an art that, important and skillful as it is, one seldom gives serious thought. Other artisans are praised, from architect to decorator, but Slim Martin's job is usually forgotten by the time the building is ready for occupancy. Slim's story tells of the life and feeling of the man who walks steel beams hundreds of feet into the sky.

James "Slim" Martin was for years a wandering migratory worker, a harvest hand, lumber jack, and member of the I. W. W. Then for thirteen years he was a structural iron worker, and helped build many a New York skyscraper. Later he branched off into acting, and played in "Outside Looking In," at the Greenwich Village Theater, and in some of Eugene O'Neill's proletarian dramas.

⁂ ⁂ ⁂

ARCHITECTS' League of Hollywood is identifying itself with the same sort of missionary work that put the Illinois Society of Architects very much on the map a year ago. The League is broadcasting the value of an architect's services to the layman who wishes to build and build right — who wishes architecture in preference to a makeshift style, who is desirous of having a building that will yield the greatest income possible from his investment. You will find a page from the Architects' League of Hollywood in the April issue. Read it.

⁂ ⁂ ⁂

MANY people have wondered why the delay in starting construction of the San Francisco Olympic Club Building. Here is the answer, taken from the club's official paper, *The Olympian:*

"Those Olympians—and there are plenty of them—who are growing impatient because they are not furnished with more information as to progress in the plans for the new building, are politely referred to the two words that form the caption of this editorial. (Safety First).

"Apart from the corrections being made by the architects to devise improvements, or to take advantage of the suggestions of expert opinion as to the interior workings of Olympia's new home, science has been enlisted into the service to have it as nearly earthquake proof as experience in that direction can make mechanically possible.

"An earthquake commission has been formed composed of the best available experts in that line, at the head of which is Professor Bailey Willis, noted geologist of Stanford University. He will be assisted in exhaustive conferences by expert engineers who have made close studies of construction that will defy those infrequent but ever dreaded convulsions of nature in so far as mechanical genius can make it so.

"In conformity with the instructions of this committee or commission, a steel model has been constructed to forestall any possible defect in the completed building, thereby securing definite minuteness as to any structural dangers. In order that a building may be designed that shall be as absolutely earthquake proof as may be scientifically possible, on advice of this committee, many structural changes already have been specified, especially where the stresses and strains may be made safer.

"The working model behaves precisely as the finished building would be likely to act, the design being to secure as much safety in the twentieth story of the new building as in the basement, and the principal studies will be in the direction of finding where the principal strains would come.

"The interior economics of our future home now have been as thoroughly covered and corrected as can very well be expected in advance of actual experience with them, and the temblor-nervous ones are confidently assured that should another real convulsion of nature ever visit our city, the home of Olympia will be the first building to 'give it the laugh'."

⁂ ⁂ ⁂

THUMB NAIL sketches from the Bulletin of the Illinois Society of Architects:

"If you want to improve your lot in life, improve your life a lot."

"The clever architect anticipates his client's thoughts; the great architect dictates them."

"Even the very best architecture is the difference between an architect's desire and his ability."

"The architect who considers himself a failure is always amazed when the world concurs in his opinion."

"There was a time when an architect had a hundred ideas. Today one idea serves a hundred architects."

⁂ ⁂ ⁂

A PROCESS of embalming trees with a solution of arsenic and copper for protection against teredos and other destructive marine borers and termites, has been revealed as the invention of Dean Charles B. Lipman and Aaron Gordon, research assistant, of the University of California. The protecting solution is injected into the tree before it is cut down and impregnates the sap, which distributes it from top to bottom of the tree in from 24 to 72 hours. The poison becomes a part of the wood tissue. It is injected into the tree by gravity through a feed pipe from a tank connecting with two crescent-shaped pipes which are set in a ring cut in the trunk about three feet above the ground. Jets attached to the crescent-shaped pipes fit closely into holes bored in the tree. The tree is killed by the treatment. Tests over a period of several years are said to have demonstrated the efficiency of the embalming process. The inventors, who hold patents on the process, say the cost of treating a large tree is about $5.

⁂ ⁂ ⁂

THE State Association of California Architects, spurred on by its local achievements, has launched a movement for a national organization. The boys are ambitious to say the least. Just how the American Institute of Architects will welcome this move remains to be seen. The Society declares its organization shall be subordinate to the Institute. It certainly should be. But will it draw from the Institute membership? Will it enroll members who might otherwise identify themselves with the Institute? The latter is supposed to be governed by a high plane of ethics. The Association's ethics are admittedly not so good. Which organization then will have the popular following?

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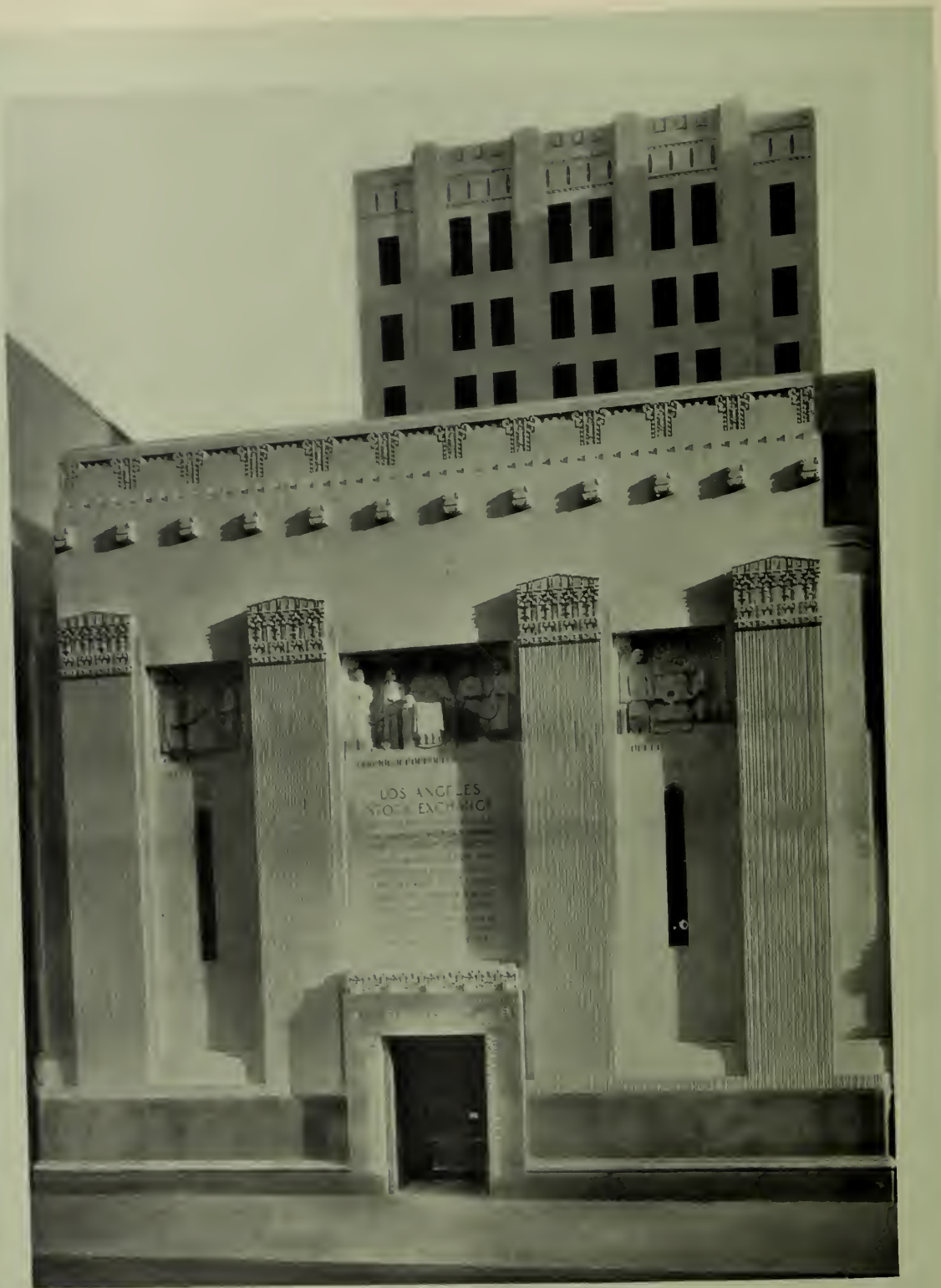

STOCK EXCHANGE BUILDING, LOS ANGELES

SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

THE
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AND ENGINEER

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THE LOS ANGELES STOCK EXCHANGE

by FREDERICK W. JONES

WITH the completion of the new Stock Exchange Building in Los Angeles all of the Metropolitan cities of the Pacific Coast, with the possible exception of Portland, Oregon, have reached the fulfillment of their dreams in having new homes worthy of the organizations that occupy them. First came San Francisco with a magnificent structure, designed by Messrs. Miller and Pflueger; next, Seattle, Washington, where a building of skyscraper proportions has lately been finished from plans by John Graham. And finally, we have the Los Angeles Exchange, effectively handled by Samuel E. Lunden, architect, and John Parkinson and Donald B. Parkinson, consulting architects. While the exterior leans to the classic the interior is strikingly modern, almost daring in conception, yet harmonious and refined in every detail.

To use the architects own interpretation of the style: "The building is conceived as a strictly modern structure; but is a logical outgrowth of the older forms of architecture just as the Exchange is a modern institution although founded on principals as old as civilization itself.

"The character and style of architecture in this building are derived from most important abstract qualities of the Stock Exchange as an organization. Stability is expressed by the choice of materials—granite and bronze. Granite is the most durable of all the building materials. Bronze, although not the strongest of metals, is best suited to withstand the ravages of the elements."

DETAIL OF FACADE
LOS ANGELES STOCK EXCHANGE

The building has a frontage of eighty feet on the east side of Spring Street between Sixth and Seventh Streets, with an average depth easterly of one hundred forty-one feet to rear alley. The building rises sixty feet from sidewalk line on the main facade frontage on Spring Street and a further seventeen feet at the first setback which occurs twenty-seven feet from the building frontage, and at the rear end of the lot the shaft of the building continues eighty-four feet above the setback to limit height. The tower portion is surmounted by a pent house

ELEVATOR LOBBY, STOCK EXCHANGE BUILDING, LOS ANGELES
Samuel E. Lunden, Architect; John Parkinson and Donald B. Parkinson, Consulting Architects

ENTRANCE LOBBY, STOCK EXCHANGE BUILDING, LOS ANGELES
Samuel E. Lunden, Architect; John Parkinson and Donald B. Parkinson, Consulting Architects

fifteen feet high, with the cooling tower for the air conditioning system rising an additional twenty feet. The total height from the sidewalk level to the top of the cooling tower is one hundred ninety-five feet nine inches. The height of the building from the bottom of lowest footing is two hundred twenty-seven feet eleven and one-half inches. There are thirteen stories including the fan room levels. The building contains a gross square footage of 90,000 square feet and has a volume of 1,375,000 cubic feet.

The building has a structural steel frame encased in concrete fireproofing and supported upon foundations of structural steel girders and footings of reinforced concrete; the floor and roof construction are of reinforced concrete with exterior filler walls of brick masonry faced with terra cotta excepting the street front facade which is granite and carved ornamentation.

The exceedingly large size of the board room, seventy-four feet wide by ninety-four feet long by forty feet high, covering, as it does, the major portion of the lot, coupled with the total absence of interior columns, made it necessary to carry all loads on the wall columns except at the extreme front and rear portion of the building. In each of these locations it was possible to get two rows of columns clear across the lot. All of the structure that exists over the board room, including the seven story tower, had to be carried across to the wall columns.

The front of the tower was carried on a truss which extends through the fifth story and supports not only the columns over it, but girders which carry the row of columns adjoining it.

These heavy loads concentrated on the wall columns, in order to eliminate the eccentricity on the footings, made it necessary to carry heavy twin steel girders entirely across the building under the basement floor.

Paul E. Jeffers designed the structure of the building.

The new home of the Los Angeles Exchange was designed to provide for the needs of this institution in a thoroughly up-to-date manner. In the first place, the physical requirements have been considered of prime importance and have determined the size, height, and character of the building as a whole. The various parts of the structure are designed to express their purpose and use.

The main street facade, which is approximately sixty feet in height, is built of grey granite. The eight-foot base course and main entrance feature are of the same material, polished. The base course is surmounted by reeded buttresses, terminating in richly carved caps. The buttresses support the entablature which is unornamented except for a row of carved bosses and a carved cresting. The sculptured frieze occurs just below the entablature and is divided into three panels by these buttresses.

The main portion of the facade does not extend the full width of the site but is flanked by slightly lower structures which cut back at an angle from the street, thereby setting the building apart from adjoining structures.

The single massive doorway and the narrow windows with heavy grilles are witness to the private and secure nature of the Exchange. Over the entrance door interlaced stems express the inter-relation of the activities of the members of the organization.

The quality of strength is shown in the use of simple and massive forms. Ornament, although rich in texture, is rigidly confined to simple shapes. Accuracy and precision are evidenced in the decisive character of the ornament as well as the massing of the structure. Each form is as definitely designed and carried out. Every detail is finished.

The ornament throughout the building is based principally on plant life, expressing only the essentials, life and growth. All traces of actual plant forms which can be recognized by leaf or flower have been suppressed. The carved projecting bosses in the upper part of the facade represent the bundle of reeds, in ancient times the symbol of authority. The pattern of the parapet suggests the battlements of a castle, the strength to resist assault.

The three carved panels in the upper part of the facade symbolize modern in-

dustry. The left hand panel represents Research and Discovery, the central panel Finance, and the right hand panel Production.

In the left hand panel Chemistry, one of the most important of the Sciences, has been taken as a symbol of all the branches of Research and Discovery in which man derives knowledge and substance from nature. The figure at the left is contemplating a book, signifying knowledge on which discovery is based. The figure at the right, engaged in some chemical experiment, signifies the act of Discovery. In the background are the results of Research; factories and natural resources, the latter symbolized by oil derricks.

The central panel represents the Stock Exchange, which is an intermediary between Finance and Industry. The central figure is a personification of the Exchange. It's face is impassive to the emotions of those who buy and sell. It is seated on a throne on the base of which are carved the bull and the bear, symbols of the rising and falling market. At either side stand the men who supply the finance for Research and Industry. The tape, a symbol of the physical equipment of the Exchange, passes through their hands and through those of the central figure, signifying their connection with the Exchange. Beyond them rise office buildings and the background is filled with the protecting wings of our Eagle.

DETAIL, LOBBY CEILING, STOCK EXCHANGE BUILDING, LOS ANGELES
Samuel E. Lunden, Architect; John Parkinson and Donald B. Parkinson, Consulting Architects

In the right hand panel the act of producing is demonstrated by two figures; at the left a steel worker pours molten metal into a mould while the other is puddling the metal. In the upper central part of the panel there is an airplane motor in process of construction. At the sides are other products and machines. In the background are factories, chimneys, and electric power lines, all symbols of productive activity.

All the carving, both ornamental and sculptural, was executed in place under the direction of the sculptor. This was very difficult to do on account of the hardness

of the material. However, by so doing, the carver was forced to realize that he was carving directly in the surface of the building and not just in an isolated block of stone. Furthermore, the designer and workmen alike could see the relation of the ornament to the whole facade and the result is a strength and power that could not be achieved by any other method. The carving

hanging them is concealed when the doors are in either position. Each leaf of these doors weighs approximately two thousand pounds, and in the twenty-five years' experience of the manufacturers, which covers practically all of the outstanding bronze work on the Coast, they are the largest bronze doors of this type ever fabricated in this part of the country.

DETAIL OF FACADE, "FINANCE," STOCK EXCHANGE BUILDING, LOS ANGELES
Samuel E. Lunden, Architect; John Parkinson and Donald B. Parkinson, Consulting Architects

of the ornament in place is unique in this modern age.

The most outstanding piece of bronze work is the main entrance to the building. The opening is eight feet wide by twelve feet high and differs from the usual in that it contains two sets of bronze doors.

The outer doors, used only to close the building when business is over, consist of two leaves approximately twelve feet high, eight feet wide, and four and one half inches thick. When these doors are open they form ornamental jambs to the portal. These doors are hung on heavy ball bearing pivots, in such a way that the manner of

The method of pouring was quite ingenious. On account of the large area of the doors, and in order to obviate the premature setting or cooling of the bronze while being poured, it became necessary that the mould to receive the molten bronze be "gated" at about twenty places. The molten bronze from ladles was then poured simultaneously into each of these twenty "gates" or openings, causing the molten mass theoretically to meet in the exact center of the door. The results were thus a clean, sharp casting. The doors were then leveled, straightened and machined, and all ornament was hand chased by expert craftsmen.

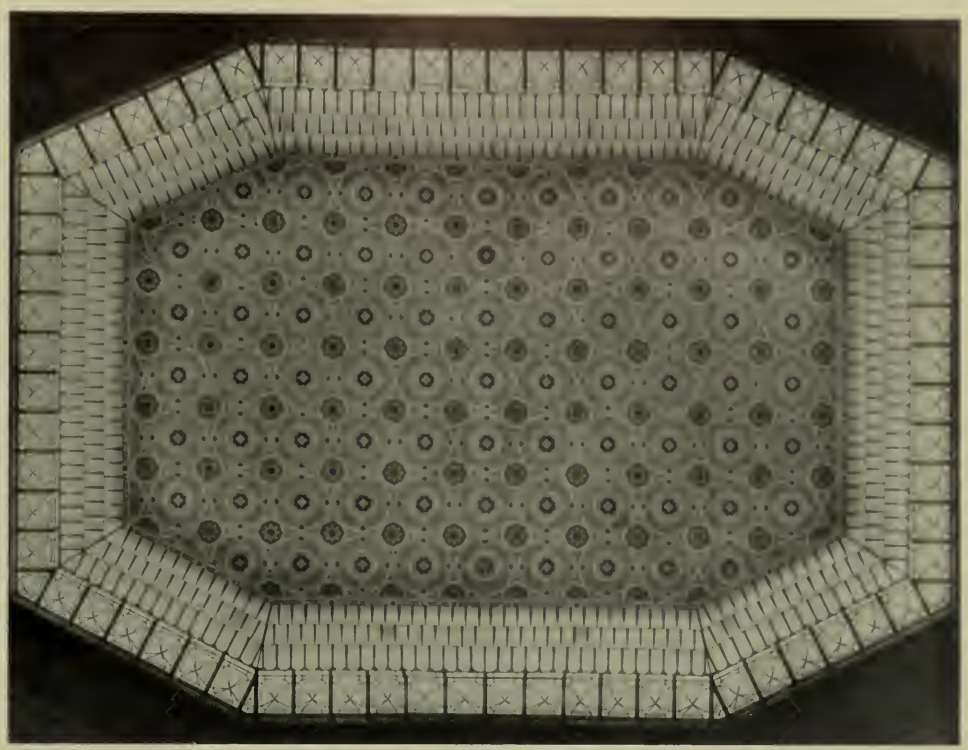
CRYSTAL-LIKE LIGHTING IN CEILING OF BOARD ROOM, STOCK EXCHANGE LOS ANGELES

COLORED GLASS WINDOW, "HERCULES," STOCK EXCHANGE BUILDING, LOS ANGELES

On these doors there is a very intricate pattern in low relief. This is designed to bring out the beauty of the material as much as possible without disturbing the simplicity of the massive surface of bronze. The work of modeling and finishing these doors has been carried out with great precision and care. Conceived like massive vault doors, they are yet detailed and executed with the craft of a jeweler.

The inner doors of bronze and glass are peculiar in several respects. Great skill was shown in preparing the castings to make them as thin as possible to keep the doors light in weight. In fact, many of the free standing parts of the ornament are hollow. The design is so contrived that the glass panels are independently hinged to permit them to be easily cleaned. The reverse of the grille work back of the glass is as carefully finished as the face.

Over the inner doors, the words "Los Angeles Stock Exchange" are made a part of a highly ornamental bronze panel. The style of these letters was derived from the



CEILING OF MAIN BOARD ROOM, STOCK EXCHANGE BUILDING, LOS ANGELES

character of the ornament and was originated for this building.

The walls of the entrance lobby are of polished Sienna Travertine. The floor is a pattern of Roman and Colorado Travertine.

Premier Sienna Travertine is a product of Germany and is notable for its rich coloring of reddish brown and tans similar to Old Convent Sienna marble. Roman Travertine is a material similar to Sienna Travertine in structure but creamy white in color. It is imported from Italy. Colorado Travertine, as its name implies, is of domestic origin. It is somewhat more varied in color than the Roman. According to geologists, Travertine was formed by the precipitation of calcareous matter from water charged with carbonic acid gas. This produces a stone which is filled with holes and bubbles, which give it a very interesting texture.

The ceiling is of acoustical plaster with the cornice richly modeled and cast in the same material. These are decorated in gold leaf and color.

COLORED GLASS WINDOW, "DIANA," STOCK EXCHANGE BUILDING, LOS ANGELES

TRADING FLOOR, MAIN BOARD ROOM, STOCK EXCHANGE, LOS ANGELES
SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

Incorporated in the design of this cornice are four decorative panels symbolizing four of the principal abstract qualities of the Exchange.

In the corner of the lobby at the left, opposite the stairway, a figure bears a pair of scales, symbol of "Equity". In the background of the panel, the Greek symbol of Libre, meaning the scales, forms a pattern.

At the right, opposite the stairs, a figure in the act of shooting a bow signifies Accuracy. The background pattern is composed of the Greek symbol for Sigitarius, the Archer.

At the left, adjacent to the stairs, a figure contemplates the universe, a symbol of permanence. A broad band cuts across the background bearing the planets and in the rest of the field is a pattern of stars.

Adjacent to the stairs, and to the right, a figure is on the point of running, suggesting "Speed". Behind it, wings further accentuate the idea. In the background, the Greek symbol for Mercury forms a pattern.

The lighting fixtures at the ends of the room are of solid bronze, and are designed as an integral part of the cornice.

On the wall opposite the stairway, a yellow Verona marble tablet sets forth in carved letters, the names of those men directly coscerned with the erection of the building.

At the left of this tablet, a bronze door leads to space as yet unassigned, but planned to be rented as a concession. Adjacent to this door, at the right of the entrance, a pair of bronze doors of similar pattern will eventually open into an elevator which will serve a visitors gallery overlooking the main board room. It is planned to finish this room in the near future. At the left of the entrance a similar bronze door opens on an emergency stair leading to the future visitors gallery. Adjacent to the main stairway, there is an information desk.

Opposite the main entrance, a long corridor 15½ feet wide and 10 feet high, leads directly to the elevators which serve the office of the building. The walls of this corridor are of Sienna Travertine finished with a hone or dull finish. The floor is of Roman Travertine. The lighting is semi-indirect, and designed to form the principal ornamental member of the cornice, running the full length of both walls of the corridor, a distance of 105 feet.

At the left, part way down the corridor, an alcove provides access to three telegraph offices, which open into same through Travertine arches. These offices are occupied by Western Union, Postal Telegraph and Federal Telegraph. Of interest in this alcove, are a handsome Travertine bench with leather cushions, and an ornamental cast bronze gate leading to one of the offices. Beyond the telegraph alcove, at either side of the corridor, doors lead to rental space provided for a barber shop and a restaurant. Other doors from this corridor open into locker rooms and lavatories for the members and assistants.

Returning to the main stairway; the walls and carved balustrade are of polished Sienna Travertine. The octagonal newel post is carved out of solid material. The stair treads are Roman and the risers Colorado Travertine. The wall hand-rail is constructed of heavy hemp rope covered with leather, wound with bronze wire, and supported on bronze brackets. Over the stair well is suspended a handsome octagonal fixture executed in bronze with richly modeled members supporting the translucent glass panels. This fixture is 2 feet in diameter by 5½ feet long. The ceiling and ornamental cornice are of acoustical plaster, the cornice being decorated in gold and color.

The stairs lead directly to a lobby from which doors open into the main board room. The members lounge opens off this lobby. The walls are of large slabs of polished Sienna Travertine rising 18 feet to the elaborate plaster cornice. In this lobby, unity is achieved by making the walls, cornice, and ceiling a single design. The upper part of the walls slant in toward this cornice which in turn encroaches on the ceiling, seeming as much a border of the ceiling as a part of the wall. The rich coloring of the Travertine is carried into the decorative scheme of the cornice and ceiling. The scheme of this room is a logical development of the lower lobby and stair

hall designs and anticipates the design of the main board room.

The principal decorative feature of the lobby is the panel over the carved Sienna Travertine entrance to the board room. In the middle of this panel, a seal is carved which symbolizes the work of the Stock Exchange. Two pairs of hands simultaneously give and receive a document, demonstrating the act of exchange. In the center, an arrow and an hour glass symbolize the passage of time. This panel is flanked by carved ornaments in low relief.

The room is lighted by a large chandelier of cast and chased bronze enriched with sandblasted glass. In an arched recess opposite the entrance to the board room, there is a comfortable seat furnished with deep leather cushions.

The board room is illuminated with one of the largest and most interesting installations of totally indirect lighting. This is accomplished by means of a continuous light box around the ceiling. This box is concealed by ornamental glass supported on framework designed as a border for the ceiling. The outer band is made up of a row of panels approximately three feet square, each one of which contains a shallow inverted pyramid. Inside this are three rows of glass troughs about two feet long, one foot wide, and four inches deep, overlapping like shingles, the inner row being closest to the surface of the ceiling. The glass troughs at the inner edge of the light box are open at the ends, the impure air in the upper part of the room being drawn through the light box and exhausted together with the heat from the lamps. The glass itself is hone finished, some parts of which are treated with lacquer to give rectly concerned with the erection of the of glass to glaze this cornice lighting.

The lamps are placed out of the line of vision at the lowest part of the box, and throw their light by means of reflectors on the inside surface of the box which is specially designed to give a diffused reflection. As a result, bright spots on the ceiling and shadows on the floor are entirely avoided and the effect is that of a soft perfectly diffused light approximating daylight.

Additional light for the board is provided by specially designed flood lamps in cast bronze housings which are bracketed out just above it.

Ralph E. Phillips, Consulting Engineer, was retained by the architect to lay out the work for this ceiling lighting.

The outstanding features of the members' lounge are two colored glass windows. In the left hand window, Diana, a symbol of action, is attended by her hound, a symbol of Faithfulness. In the right hand window, Hercules, who stands for strength, rests from his labors. These windows are unusual in that they are not of stained or painted glass. The glass is what is known as flashed glass. That is, clear glass which is covered with a colored glass film. The design was obtained by cutting through the colored glass film with the sandblast, and further enriched by treating certain portions with acid. The resulting windows are original both in design and execution.

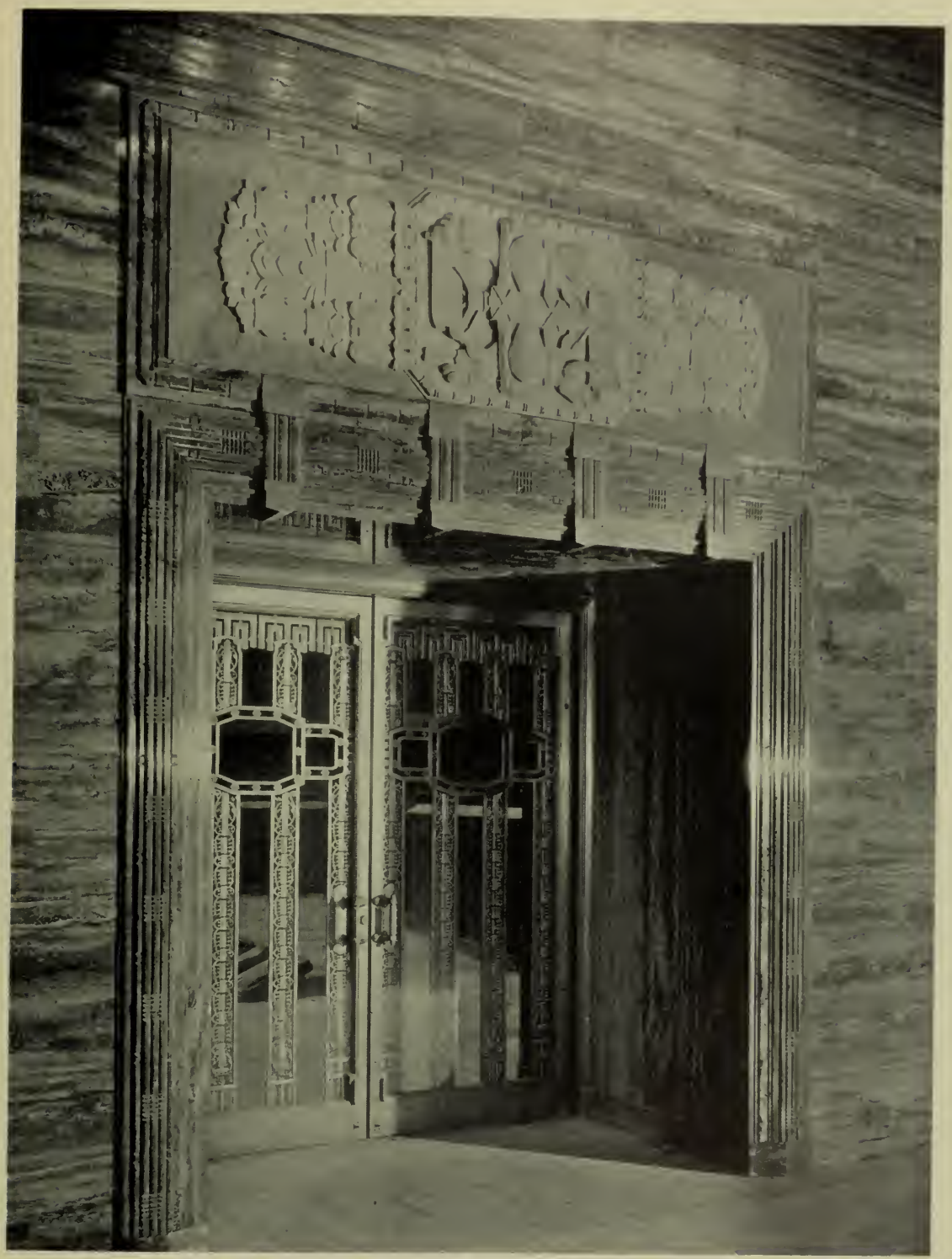
The lounge is equipped with tickers and bulletin board. Annunciators, signal lights with a call button board is provided enabling the members to keep in touch with their respective booths. Over the doorway leading to the trading floor, a panel is provided for translux projection.

The sculpture in the building was designed and executed by Salvatore Cartaino Scarpitta in close collaboration with the architect.

The three panels forming the frieze of the main facade have been so designed that they are not only in perfect accord with the character of the building, but achieve a distinction rare in architectural sculpture. An interesting feature is the masterful handling of the problem of representing modern men in modern attire without losing monumental quality.

The escutcheon over the entrance to the board room, and the panel in the mantle of the governing board room depicting the development of the Southwest were executed under the direction of Mr. Wilson of the Wilson Studios.

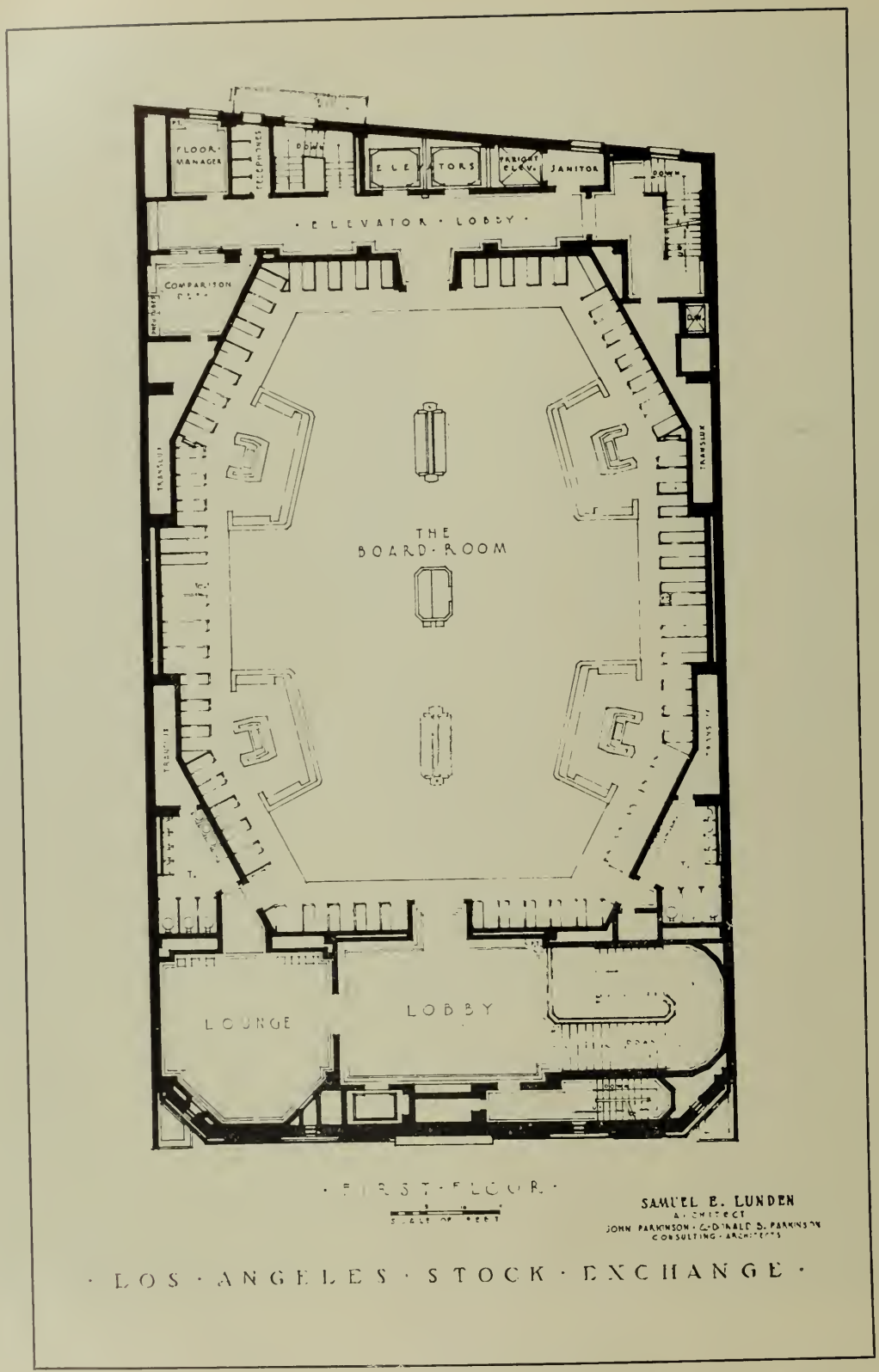
Julian Ellsworth Garnsey, mural painter, designed and executed the painted decoration under the direction of the architect.



Note Seal of Exchange carved in yellow Verona marble over Architrave

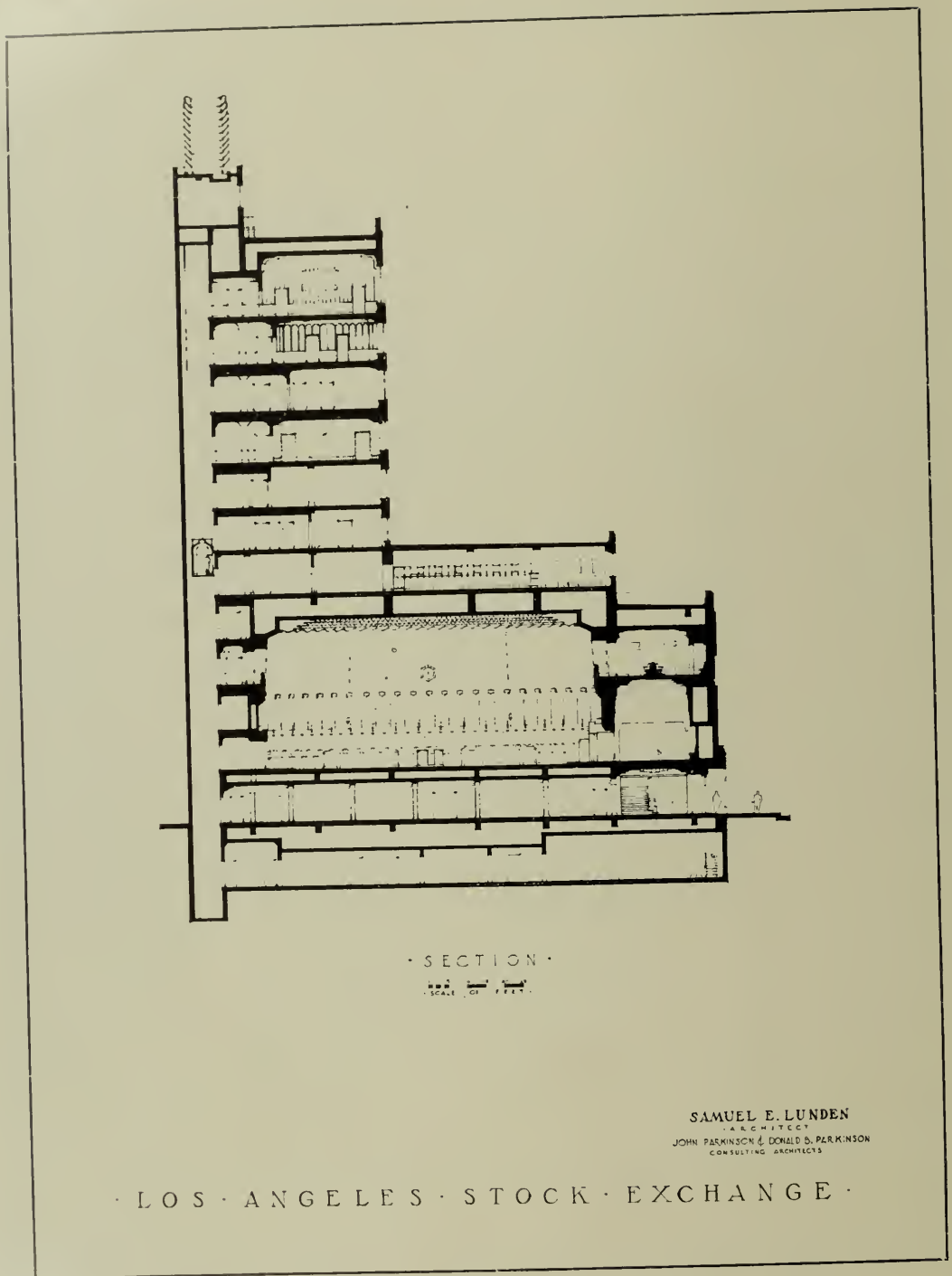
ENTRANCE TO BOARD ROOM, STOCK EXCHANGE BUILDING, LOS ANGELES

SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS



PLAN OF FIRST FLOOR, STOCK EXCHANGE BUILDING, LOS ANGELES
SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

MAIN ENTRANCE, STOCK EXCHANGE BUILDING, LOS ANGELES
SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS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ARCHITECT
JOHN PARKINSON & DONALD B. PARKINSON
CONSULTING ARCHITECTS
· LOS · ANGELES · STOCK · EXCHANGE ·

SECTION, STOCK EXCHANGE BUILDING, LOS ANGELES
SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

MAIN ENTRANCE, STOCK EXCHANGE BUILDING, LOS ANGELES

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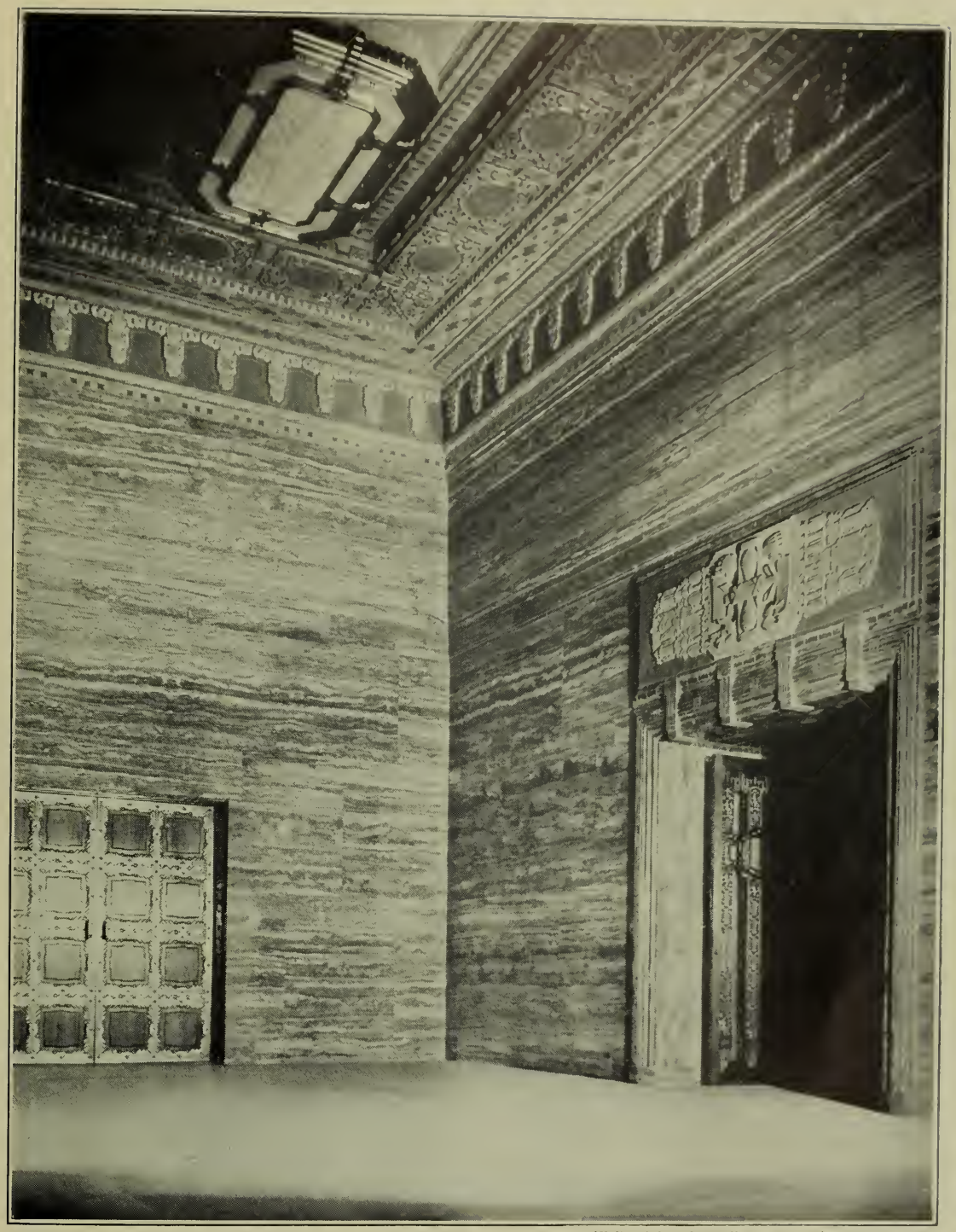
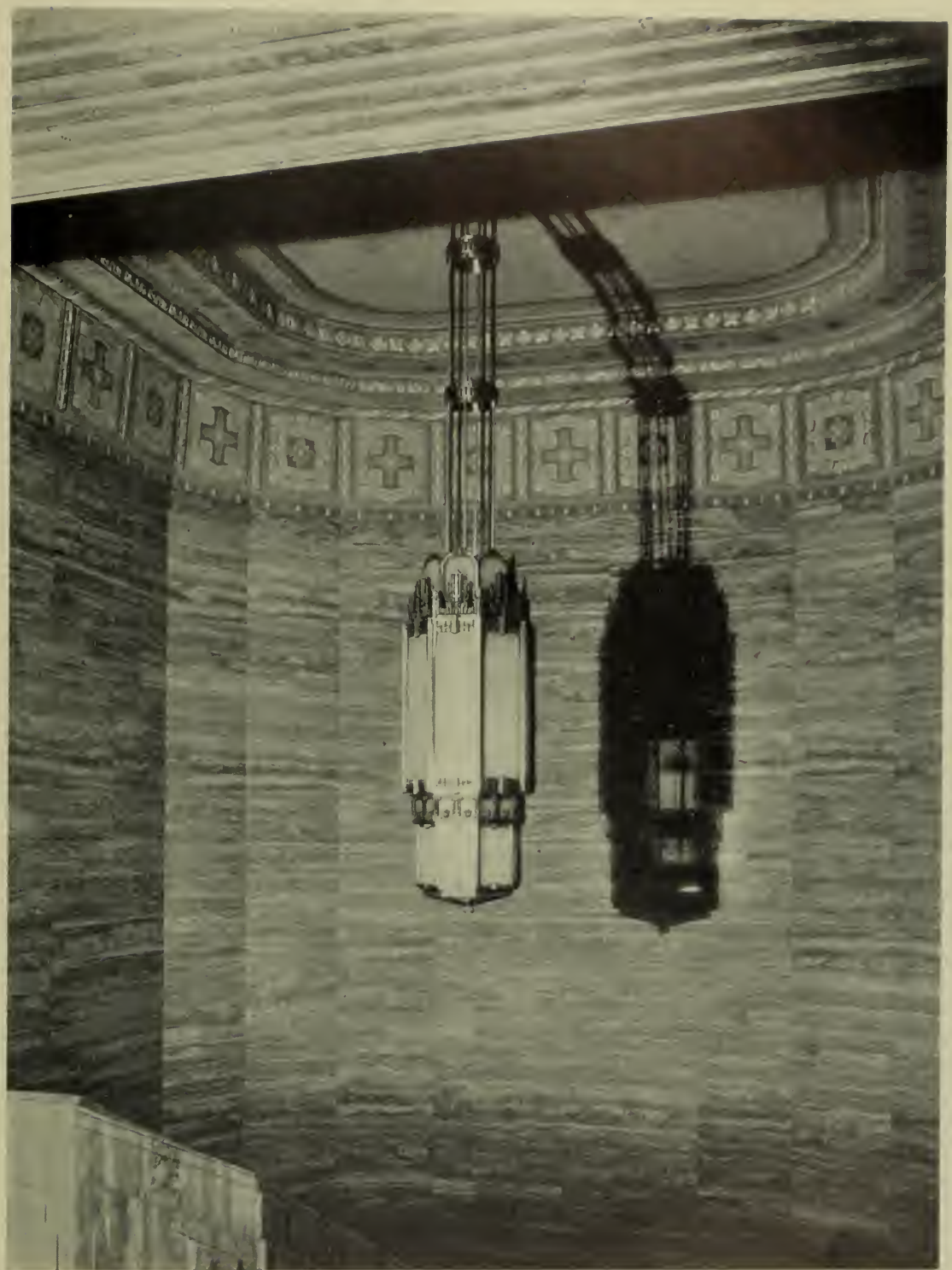


Walls of Premier Yellow Verona-Sienna Travertine

LOBBY OF TRADING ROOM, STOCK EXCHANGE BUILDING, LOS ANGELES

SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS



UPPER PART MAIN STAIRWAY, STOCK EXCHANGE BUILDING, LOS ANGELES
SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

Carved panel depicts development of the Southwest

MANTEL IN GOVERNING BOARD ROOM, STOCK EXCHANGE BUILDING

SAMUEL E. LUNDEN, ARCHITECT; JOHN PARKINSON AND DONALD B. PARKINSON, CONSULTING ARCHITECTS

MURALS IN OFFICE OF BUILDING AND LOAN ASSOCIATION, SAN FRANCISCO

BY FRANK W. BERGMAN

Travel Sketches in Italy

by Joseph Mason Reeves

BRIDGE IN FLORENCE

STREET SCENE, PERUGIA

STREET SCENE, PERUGIA

A STREET IN PERUGIA

PORTA PINCIANA, ROME

RAMP LEADING TO CATHEDRAL

SAN ERCOLANO, PERUGIA

STREET IN SIENA

MONUMENTAL APPROACH TO CATHEDRAL, ROME

A STUDY IN ROOFS

ARCHITECTURAL REFINEMENTS

by WM. LEE WOOLLETT, Architect

FOR centuries men have been charmed with what they have been pleased to term "the life," "the vibration," "the sense of unity," in the Greek Temples without knowing just why. Through the research work of Goodyear, Pennethrone, Hoffer, Penrose, and others, we have come to know some of the facts relating to these wonderful buildings.

From these Savants we learn that the plan of the Greek and Egyptian temples and of Medieval structures were frequently varied from the rectangular form—that the main lines of the structures were as often curved slightly, sometimes in one and sometimes in both planes, that wall surfaces and columns were inclined—numbers of the cornices and capitols distorted, the syncopated regularity and sequence of details intercepted and mouldings varied in section, that both premeditated and accidental variations from symmetry have characterized at times the best construction.

Though research has developed the facts in connection with these refinements, no one has thus far explained the phenomena in a manner to wholly justify the facts.

In the main, these refinements are deemed to correct certain optical illusions and to soften and refine the outlines. This I believe, is the gist of Professor Goodyear's book on the subject. The concenses of opinion seems to justify the belief that these refinements are the result of deliberation and judgment on the part of the builders. They are, as Professor Goodyear characterizes them, "temperamental refinements." They may be considered also, if we may venture the suggestion, the technique of artists who would utilize color values.

Observe the curve in the elevation of the Ionic Temple at Pergamos—these curves in the wall serve to throw an added light on the surfaces fartherest from the eye, thus giving the effect really of a much larger surface receiving the same amount of light over it's whole extent, for one naturally thinks of a straight, plain surface of great extent rather than of the limited curved surface, and measures the extent of the wall by the amount of light. Also the flush of light on the wall surface gives a sense of atmosphere, a modeled quality which takes from the hardness, increases the life and vitality of the structure. The roundness tends to diffuse the color of the material of which the wall is composed making a sharper contrast between the near and far portions of the building.

Observe also the tipping forward of the architrave of the Doric cornice which architects have known—I might say for decades. By so doing the jointing was thrown "out of the vertical" thus giving emphasis to the impact of weight on the column cap, assisting and augmenting the parallelism of the flutes of the columns below, and overcame a certain unstable appearance in the abacus of the cap, due to optical distortion in perspective.

Consider the tipping of the face of the abacus of the capitol in the Parthenon, 1/16 of an inch, in thickness 1.149 feet. This is enough to foil the long line of the column entisis which moves in the opposite direction, also quite enough to differentiate this surface in color from nearby parallel surfaces, and the soft converging forms of the fluted surfaces in the columns below; but above all it assists in preserving, in spite of optical illusions, the unqualified squareness of the cap, the spreading member — the abacus —preventing any apparent softening of the block-like effect so desirable in this member as a spreading member, and so preserves the static situation in unqualified terms.

Taken in detail many of the refinements of the ancient architects must in the nature of the case defy the reasonable inquiry of the student—for some interest must have been naive and without logic from the standpoint of the architects themselves, just as any artist's technique defies minute analysis. In the manner of the artist who puts with unfailing touch the last dab of red in the painting—the painting is finished complete, satisfying, but the blot of red has disappeared in the harmony of the whole—to resurrect it and call for a reason would be puerile.

In the main these refinements are the result of intimate and delicate handling of the psychology of construction, the laws of optics would naturally come in for a share of attention, in an attempt to get the greatest amount of impact in the realm of the abstract from a given structural situation.

It is desirable to observe in connection with these refinements in architecture that whereas certain lineal refinements in the Greek Temples have passed for ages unnoticed, because they may not be detected by the eye except through the assistance of the most careful photograph. These refinements give evidence of their existence however through the general character of the architectural result.

The effect of life and vibration and unity noticed by travelers and writers in these buildings, is of course, the result of this fine modeling.

WOOD ENGRAVING, "CANVASS MOUNTAINS," BY MICHAEL BALTEKAL-GOODMAN

HONORS FOR SAN FRANCISCO ARCHITECT

IN a recent one man jury competition, sponsored by the American Society of Graphic Arts of New York, a San Francisco man was awarded honorary mention for a wood engraving of a circus scene, entitled "Canvas Mountains," done in the modern spirit. The winner, Michael Baltekal-Goodman, is a University of California alumnus and lecturer, and was formerly associated with Miller & Pflueger, architects of San Francisco. A total of fifty awards were made to American artists, both in this country and abroad. The jury, Louis Mumford, is internationally known as an art critic and distinguished writer.

Prints of "Canvas Mountains" have been placed on exhibition in all of the local galleries by courtesy of Vickery, Atkins & Torrey. The same print is also to be reproduced by Professor Neuhaus in his new book on Art.

A second honor recently accorded Mr. Goodman was a first place award for his sketch "Spring Grass," entered in the pastel division at the Santa Cruz Art Exhibition.

FLOODLIGHTING THE SKYSCRAPER

by I. P. CREVI *

IN recent years, a new art has developed which in time is predicted to offer even greater possibilities than at present as an inexpensive and artistic form of advertising. Floodlighting of buildings has come to stay. For can there be a more dignified or more economical method of attracting the attention of the passer-by? One need not be close by to marvel at the beauty of an attractively illuminated building. The range of visibility is increased a hundredfold. The nocturnal observer may be on the hills surrounding the city, on the plains below or perhaps out at sea or on river, lake or harbor. The view of it, seen standing out against the sky or a dark background of less fortunate buildings is sure to arouse inquiry and interest. The contours and outlines will remain as an indelible picture, not easily effaced with time.

Floodlighting of buildings is one of the most effective methods of advertising. A storekeeper does not fail to switch on the lighting for his show window displays in the evening because he realizes that every passer-by is a potential buyer. The same psychology can be applied to a greater section of the building, or to the whole building itself. Instead of allowing the structure literally to die at night, it can be given life and made to broadcast its message, reminding people constantly of the "wares" for sale. If more space can be rented or the circulation of a newspaper increased or more chewing gum sold, then floodlighting lives up to the occasion.

Everyone instinctively appreciates beauty and anyone basically responsible for creating it is eventually bound to reap his just reward. Civic pride is a factor which should not be overlooked and the aggressive business man is able to capitalize on it without injury to his reputation.

Floodlighting of buildings or other distinctive structures does not merely mean projecting light on the surface to produce a bright appearance. The light should be so distributed as to impart form by desirable brightness contrasts and not produce distortion by dense shadows or grotesque images. With the proper precautions a building may have as pleasing an appearance by artificial light as by daylight.

Up to recent times, exteriors of buildings were considered solely for their appearance by daylight. Floodlighting was usually applied after the building had been constructed, without any thought or consideration of floodlighting having been given during the planning. It was then just a question of supplying available equipment to produce the best effects. Considerable difficulties were usually met with and the results were not always perfect. With the advancement of the art, and the co-operation of the architect and lighting experts, buildings today are deliberately designed for night effects with the lighting as an integral part of the structure.

Naturally floodlighting methods can not be standardized. There is no exact formula for applying light to one type of building. The building may be any style of architecture and considerable study is required before the proper application of lighting will be found to harmonize perfectly with the construction. Floodlighting projectors may be mounted on ornamental standards at the curbs at one or more positions. If a lawn with shrubbery exists in the immediate locality, the lighting equipment will be partly hidden, allowing the light source to be in an inconspicuous position, out of the

*Illuminating Engineer, Westinghouse Electric and Manufacturing Co.

general line of sight. The roofs of nearby buildings are often used for floodlighting stations. Batteries of floodlights can easily be placed there.

Often in buildings of one or two stories of a decorative nature, similar to bank structures, it is advisable to mount the floodlights at a high position in order to produce the same shadows as seen during the day due to the sun's rays coming, as they do, from above. Should the artificial light come from below, the order of shadows is reversed and unless the proper design has been provided for, a completely different aspect will be given to the building.

A silhouette effect is often applicable to a building with numerous columns. The lighting units can be located at the ceiling behind the columns to illuminate the facade of the building. Here the unlighted columns will stand out in relief against the bright background, adding the effect of immensity or volume in an impressive manner. Or the scheme may be reversed and the columns illuminated by locating narrow beam projectors at the outer base, keeping the background dark. This method is especially adopted where the columns protrude only partly from the face of the surface, and are not complete separate units located a considerable distance away.

The newer architecture, with setback construction, allows for a very convenient way of illuminating exteriors. The parapet walls offer a suitable mounting position for the floodlights and fanciful results can be achieved without any additional great expense. Color schemes may be used to advantage, each face or section lending itself adequately for a different color to be impinged on the surface. Spectacular effects can be produced, especially when the colors are made to blend into one another in an ever-changing sequence, through all the hues of the rainbow. Mobile color lighting is the expression of the age combining, as it does, the modernism of architecture with all that is new in the field of technical endeavor.

FLOOD LIGHTING THE SHELL BUILDING, SAN FRANCISCO

Geo. W. Kelham, Architect

IT'S A HELL OF A GAME

by JAMES MARTIN, in "New Masses"

WELL, I'm an ironworker. I build skyscrapers and walk steel beams sixth of a mile up in air. Sure it's dangerous. A hell of a game. If a man had any sense he wouldn't be at it. But guess a guy just has to follow out his natural bent. Some folks aspire to reach the top of Everest; or find Cathay. Most young janes have their heads full of a trip to Paris, or a hitch-hike thru New England. All looking for a kick, a thrill. That's what attracts men to this savage pastime and invariably keeps them there for a lifetime at hard labor.

You travel plenty. When a job is topped out you're done, and have no more interest in it. You look for the next to go up. A loft building in New York, an industrial plant in Cleveland, a theatre in Miami, an oil refinery in Tampico, docks in Panama, a bridge in China,—anything, any place. If it's steel they need you, and they need you badly. You get a chance to throw your feet in most any State, or country. Tell me another game that's as good thataway.

Wouldn't you just enjoy John Barrymore trying to play Hamlet in Tokio? Sure, he can't speak Japanese. But neither could the bridgemen who went over to Japan to rebuild modern steel structures after the earthquake.

Yes, thrills in plenty. Always something new. No one day like another. A man doesn't go to sleep at this game. You are up on the steel on your own two feet. Or maybe doing a piece of rigging at the masthead, with your tail wrapped around it,—you know, one hand for you and one for the company. Steel is bouncing around, and so are you, as if you were wearing two pair of rubber heels. At the least a mistake costs time and money. But more generally a trip to the hospital or morgue for a buddy or yourself. You are handling tonnage in motion, and it keeps you busy outguessing all the things that may trap you.

Most birds think it takes a sort of super man to be a bridgeman. And they forever question, "Don't you get dizzy way up sixteen or twenty floors on those narrow beams?" The answer is *no*, if you did you wouldn't be there. You are damned conscious you are up there, every second. Your subconscious mind never lets go of that fact, and when you get in a jam it's your subconscious mind that told you which way to move.

But you haven't time to think. Hell! the STEEL don't think! When a derrick wrecks it doesn't have a mind full of malicious thoughts as it picks out a bunch of ironworkers to come down on. Something snapped. A guy parted, or the topping lifted, or it was overloaded, and down she comes right now! Guys snap like cold fiddle strings and writhe and lash over the deck like snakes. Whole bays of steel are carried away. The derrick weighs about five tons.

Can you stand up in that hell of havoc and think? No indeed, you have it put away in your mind to run for a column and get on it. If things fall on one side of the column crawl round on the opposite side. If the column goes out, you ride, that's all. You go to work every morning of your life with the knowledge you may be killed or crippled, any time from 8 to 4:30. But you figure you won't be.

Even when you pick them up all broken up. Legs cut off, backs broken, fractured skulls, a couple of fingers gone, with leg

and arm bones sticking right out thru the flesh, you figure it might have been you,—but it wasn't. And you go back. Why not? It takes men for this business. And you have to know how. Of course you haven't a brain in your head to do it. But it's the only game that has the real kick in it.

And it's not bad you know, to look out over a town like New York and see a Queensboro Bridge to the South and a Hell Gate Bridge to the North, a tower like the Shelton Arms sticking up, and the morning sun striking the marvelous buildings of the garment center throwing them into an artist's dream of light and shadow and haze. And to feel you are one of the birds who do it. It's a continual pain to listen to the squawk of some would-be painters or actors claiming they are artists, because they create. Wonder what us bridgemen are. These creators, god save the word, claim that you create nothing!!! The architect and engineer had the dream, and figured it all out on paper, and gave it to a group of draughtsmen who put it into blue prints. So,—the job was created.

Maybe. For if that was the way of it, where all these great buildings now stand, and are going up, would still be only the bald rocks that I remember as a kid in this burg, and the architects could feed those blue prints to the wise sadfaced billygoats that played on those same rocks.

We are a race of genii that are making the biggest dreams of the greatest engineers of all time come true. We are doing a wondrous thing raising this fairy land out of the drab brick buildings of the older New York. Its chimney pots are so far below. And we know they are all to come down soon to make way for these greater buildings. The bridges, the docks, the subways, the power houses that are necessary to make all these great buildings possible; we build them too.

Still, let the actor have his way; he creates, if the playwright gives him a line and a situation, and the electrician gives him a spot light. The dauber paints if he can buy color in tubes made by workmen. He'll paint a masterpiece. A study of a group of New York buildings high up in the morning sunlight, with their lower floors lost in haze that the sun has not yet dispelled. Oh, yes. Will he borrow the architect's blue prints for his inspiration? No, he paints what we made, but it's only a daub on canvas, just the same. He can't paint the job we reared in steel, and brick, and marble and tile, with sweat and aching muscles, our maimed and killed, and a nickel's worth of brains.

Isn't it queer, now, the man who has a white collar job holds himself superior in intelligence to a mechanic? Even if his little niche is only the operating of a Burroughs adding machine, or a Smith-Premier. If *he* makes a mistake he tears up a letter and starts over again. If an *ironworker* makes a mistake he may start a buddy or a bricklayer ten floors below on a trip to the hospital, with no start over again. The white collared bird puts in a day that's a week long. Ours seems about two hours long. Who has the more brain work, and interest in his occupation? Let the white collared guy answer. Let Penn Station, Brooklyn Bridge, the Singer Building talk if they will for us. If not, we builded them. That pleases us enough.

What does a man think of when he is up in the air? He thinks of his work. All the time. Always. Every second. What's coming next. What he has done. If anything was not made safe, he goes back and makes it so. Safety first and last. He may not step on a loose beam, or a protruding plank, but some one else will. And they depend on your work, just as you have to depend on theirs.

Aren't we afraid of falling? Sure. Are we saps? But we don't just walk out on the iron and fall off for fun, you know. When some Johnny Come-lately is catfooting around the iron nervously, it gives you a pain. Move out. You can run on it. Don't be afraid of falling buddy, hell, I couldn't knock you off from here. It's true. You need just as much space to stand erect and still as one foot can cover. Try it on the sidewalk. Stand on one foot. You can do it? That's all you need anywhere. That's a lot. Try standing on something about

three inches wide. Easy? Walk a straight line three inches wide. Anybody can do that. Why not up aloft?

Of course as the derrick works the building sways a little. And if the wind blows, you must lean against it a little. That's no worry if it blows steadily. The squalls are hell tho. You lean against them, and like a flash they drop and just as you get straightened up they hit you again and push you off balance the other way. Or you are carrying a plank and a sudden squall makes a sail of it. That's no fun. Somebody drops a wrench and knocks a riveter into the hole. The load sways out and knocks a connector over board. A million things to cause you to fall, except your own deliberate falling. Hell, you want to stay up there, you have to be knocked off.

When driving rivets and the guy who is sticking them catches one from the heater, sometimes he loses it, and of course he is not supposed to, so he hollers to the heater, "one got away," so the heaters will know to put that extra rivet in the fire to finish the point. When a man falls it's the same cry, "one got away," and all hands go home for the day. It's a law, unwritten, but law.

You have plenty of hunches at the game too. They generally work out.

Wanted to work on the Camden Bridge last summer, so went down on a Wednesday to see if there was a job. Heard that "one got away," a man was killed the Thursday previously. There was a 500 ton jack, jacking up a top cord, it bit through the wood softener, and of course when steel met steel, the jack kicked. The bridgeman who was operating it took a ride of 135 feet to the Delaware. A scow load of steel was anchored below the traveler. Generally it had ten or twelve men on it. This day there was just one. He dove in after the man who had fallen without ever pulling the wrench out of his belt. They were both lost.

I was told to come out in the morning. Did so, and MacQuarrie of the American Bridge Co. told me to stick around till he'd gone aloft and seen how his riveting gangs were. He wasn't up there till the whistles both sides of the river were blowing. They had reaved up a set of falls the night before, to pull the traveler ahead. The whistle blew before they moused the becket. It was forgotten in the morning, and when they put a strain on the falls the becket upset and lines and blocks flew. Hit a riveting gang about the chest. Two men grabbed a header girder. One was knocked clear for a ride. He was lost.

I got a little cold footed after this beginning on the new job, but set in next morning. Came to N. Y. over the weekend which also was July 4th; had a hunch and stretched the weekend over Monday. Came in Tuesday to hear that the bird who had worked in my place was knocked off. Hunches work out. Yours truly dragged up on that bridge, and rested his nerves putting up a power house in the hard coal country.

It wouldn't be bad if everything depended on yourself, but it's all team play, and too many things to watch out for. You must think fast. And the old difference between "the quick, and the dead," applies daily to this ladylike occupation.

The engine is on the street level, and a bell man has two bell cords running down to two gongs right in front of the engineer's eyes. As those bell cords are pulled the derrick works. It may be to raise a load a sixteenth of an inch, or to raise a load of steel from the street with the engine wide open. The engineer sits there with his ears and eyes all attention to those gongs and their hammers, while his hands and feet operate the engine in response. Often the engineers hear bells all night in their sleep. One engineer frightened his wife half to death the other night by shouting, "Up and out, up and out." (Up with the load and out on the boom.) It seems a couple of days previously they poured an arch of concrete over his engine. The false work failed and the concrete came down on him. He lost the boom but picked himself up and caught it again before he wrecked the derrick or killed anyone on top.

Folks on the street have an idea that the ironworker is grossly overpaid. Most people can't think, much less reason, and have their ideas inserted right into their minds all done up in nice blue ribbon. The par-

ticular idea of the construction worker being overpaid was cooked up by the newspapers, and served thru their news and editorial columns. And what 100 per cent American would for a moment doubt what he sees in print? Print anything and it's truth.

For the benefit of the aforementioned idea wrestlers: the ironworker, in this man's town—gets paid $1.50 an hour,—*for every hour he works.* If he loses fifteen minutes because of bad weather, a man getting killed, or being injured himself, he is docked just exactly 1/4 hour. They average about $35 or $40 a week for the year,—if they are not injured and laid up for several months. When injured you go on State compensation, after seven days. It amounts to $20 a week. You are not allowed your own doctor but must use a company doctor.

Said doctor works like hell to knit the bones, or have skin grow over the wounds. The day it does you are fit for work according to him. From the day you are hurt the company wants to know if you can't go back at some easy work such as giving signals. The idea being to get you to admit you are ready for work and using that as evidence before the referee at the State Compensation office. They don't want you in the way, too many sound men waiting for a job, they just don't want you to get that compensation.

Had my hand fouled in a snatch block on the Hotel Roosevelt job. Hand was pulled through, and over the sheave. On one end of the runner was a 100 horsepower electric hoisting engine, the load was a yellow pine derrick timber 18″ x 18″ and 31′ long. When the tips of my fingers went over the sheave you can imagine the mess. After pulling off my glove, there remained in it four finger nails, the face of one finger, and another finger was split to the bone. Was paid three weeks' compensation, and four months later called before the compensation referee and awarded a final settlement of $50, tho my finger tips were still just so much raw meat.

If you do not accept the award, they put the case back, again and again, till if you do go to work for some other firm you lose more time and pay than the award will come to. The compensation law was for the protection of the worker ostensibly, but it is not. It is only for the protection of the employer. He can take any chance with our lives, and is protected by the insurance companies. This all ironworkers know and feel, and are bitterly resentful against.

We work more strenuously, and lift heavier loads, perched in the air than the average man would attempt on the street. We risk, and pay, when we lose, our lives, limbs, and happiness of those who love us, —for after all, most of us are somebody's darling. We work broken time because of weather, and time spent pounding the streets between jobs. Behind us we leave an industrial civilization. Is $1.50 an hour too much pay? Or even $1.75 if we get it?

Now all you birds who will gamble a broken back against $1.50 an hour, line up.

Hm, no hell of a rush, is there? And don't forget you will get yours on this job sooner or later. Have worked with fifty men, at least, who have since been killed. Some of the boys working with me now will soon get theirs. Perhaps yours truly is first on the list. Lots of room in this game for ladylike young men to make a fabulous income.

What in the world keeps one a jellybean bridgeman anyway? Just thriftlessness no doubt. Have put in thirteen social seasons in this set so far, but guess I'll have to go along for two weeks more. There is something wrong with the mainspring of my Rolls Royce. Oh, hell, there is always something to keep me in this wild scramble of making money, and preventing me joining the ranks of the poor and happy!

Yop, we are paid too much—NIT! My breast swells with working class pride every time I hear some little milliner, or actor, or street cleaner take up the battlecry of the property owner, and engineering contractor. "The working people are demanding too much, for instance, look at the building trades." Every thing we built ten years ago is worth triple now!!! Of course we get that too, as back pay? Maybe.

And there's no steel construction in the houses we live in. There is nothing but rot-

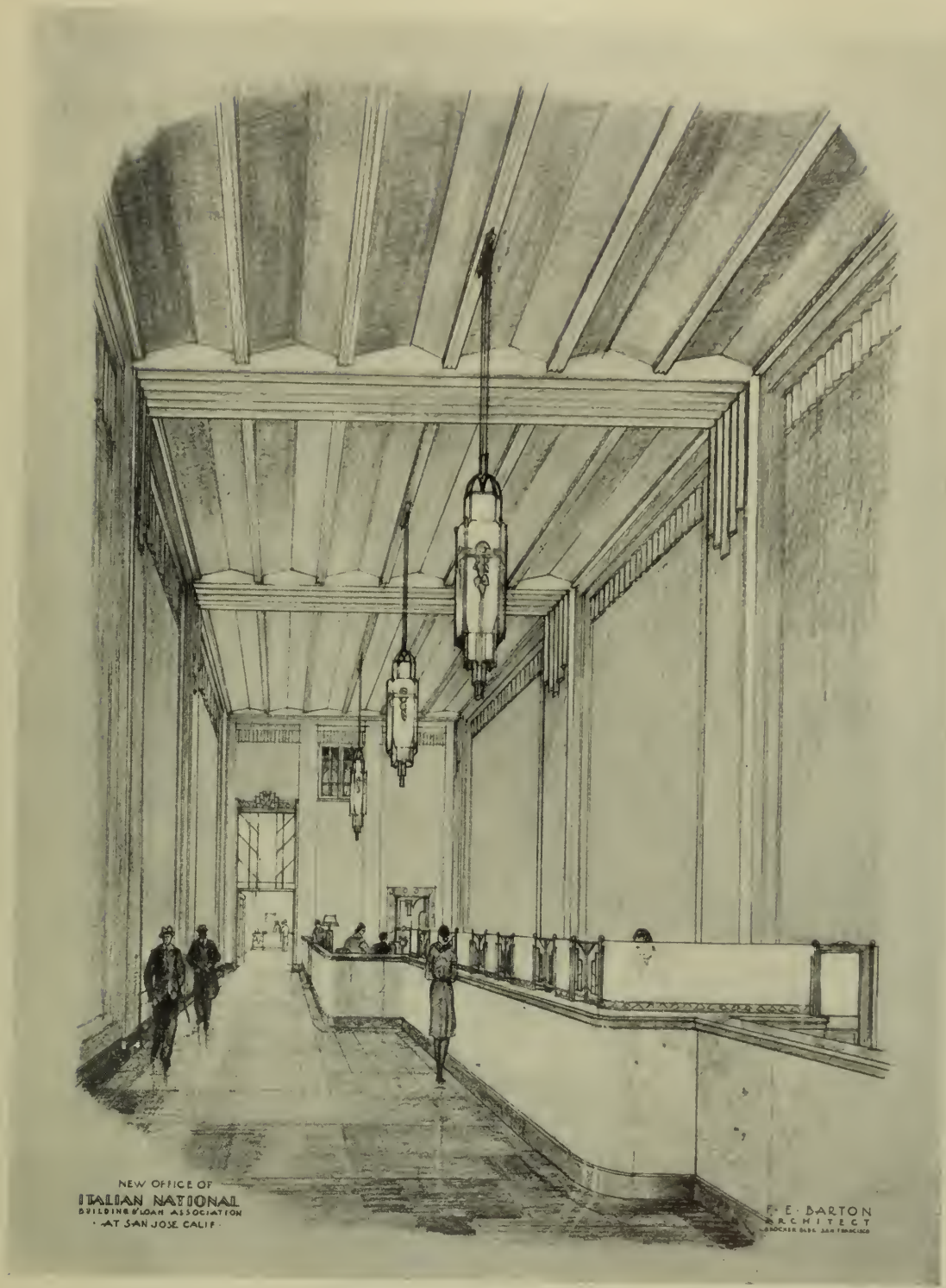
ten rafters, falling plaster, rats, cockroaches, clothes lines in the back yards, garbage cans on the sidewalks in front of our homes. Oh my, but the houses we build! Reasonable rents. Nice two and three room apartments, elevators, $1,800 to $6,000 a year. Apply Supt. You know I have such fusses with my Superintendent. Whenever I return from work he will mistake me for an elevator inspector for the Casualty Co. and insist on me entering thru the tradesmen's entrance!!! It makes me so mad.

Well, I'm a damnfool bridgeman. None of us knows why. If you stay away from the steel for a couple of months you think what a fool you were to ever be at it. But one day the old urge comes to do a man's work again. Or maybe you are broke, the urge comes from the belly, (how unesthetic!) You hate to go back, you have stood off and had time to review the danger, the close shaves, your injuries, others' injuries and death, but you *go back!!!* And immediately regain the psychology (reached round in my back pocket for that 65c word) of the ironworker. Why man, do you know half the bridgemen in town are glad to get on the job in the morning because they're worried down below: the traffic is so dangerous coming and going!!!

Well, it is a hell fo a game. It makes young men old fast. And keeps old men younger than anything else known. Not even barring King Solomon's recipe. But both recipes wouldn't work out together,—still, the iron worker's psychology,—how do you know till you try?

OFFICE OF ITALIAN NATIONAL BUILDING AND LOAN ASSOCIATION
SAN JOSE, CALIFORNIA

F. EUGENE BARTON, ARCHITECT



OFFICE OF ITALIAN NATIONAL BUILDING AND LOAN ASSOCIATION
SAN JOSE, CALIFORNIA

F. EUGENE BARTON, ARCHITECT

CLEAN TILE ROOFS FOR OLD HOUSES

by WM. LEE WOOLLETT, A.I.A.

ROOF tiles for an old Normandy house at Lake Arrowhead, California, have been interesting me lately. The manufacturers showed tiles which were the finest we had ever seen for such a purpose, i. e., a flat red tile burned and semi-glazed to stimulate the effect of weathering and lichen growth. "On the roof," the effect produced by this tile was a soft pinkish purple gray. The dark toned tile under certain lights seemed to be responsible for an effect of dullness, and the light gray tiles which were used on the hips and ridges seemed to me to be somewhat colorless. We therefore, proceeded to create conditions which would increase the range of effective color combinations. We wanted a sense of cleanness, of age, of vibrant color. The whole effect was to be virile so that the roof might hold its own in a setting of mountain, blue sky in which white cumulous clouds are often seen, dense dark green of pine boughs and the sharp black shadows which characterize these high altitudes.

We reasoned that in order to nullify the effect of apparent dullness, it would be necessary to introduce a Dutch pink gray tile, the complimentary color of the mean tones prevailing in the roof; also in order to explain and make additionally vocal the areas of subdued gunmetal color, small areas of a deep blue gray tile would be desirable. Through the untiring efforts of the manufacturers these tiles in the proper color values were introduced into the roofs. The greatest enthusiasm now prevails on the part of the manufacturers to say nothing of the client and the architect in consequence of our having produced a roof which, while seeming to be old and weather-worn, has at the same time a crisp and clean effect. The roof makes one think of a freshly drawn water color sketch. This effect was produced solely by increasing the effective range of color values, keeping each tile solid in tone so that it would vibrate properly with its neighbor.

I have before me a reproduction of one of Jules Guerrin's drawings. Well, this tile roof in fact is as soft and mellow as one of Jules Guerrin's drawings. Each tile seems now to have a clean color value of its own. The colors range through the grays, with accents of soft reds, purple, blue, green and yellow shades. The values are very close, so close in fact that only the initiated can appreciate the range of colors employed. The prevaling tone is a purple gray, the same as before our experiments, but a clear warmth is now apparent trickling through the larger masses of cool color. A soft tone which might be comparable to a "drift wood" effect in tiles is the reward of our efforts and there is no affectation, it is a real roof.

A GLIMPSE OF OLD NORMANDY

ENGINEERING

and

CONSTRUCTION

Featuring "Fabricrete", a New Method of Fireproof Construction for Buildings of Light Load Occupancy

by WALTER T. STEILBERG, Architect

* * *

Editor's Note—The author and inventor of the system described in the following pages is a University of California alumnus and for many years was associated as Architectural Engineer with Miss Julia Morgan, whose work is well known throughout the Pacific Coast. The several methods of construction described and pictured by Mr. Steilberg are the result of many years of experimental work. The author believes he has invented a system destined to revolutionize present day building methods. The use of wood is practically nil. Optional methods are suggested for the application of a monolithic type of concrete with steel fabric as a binder and reinforcing element. A second article, giving tests and other details, will be published in the April issue.

Note one inch stucco shell standing after entire wooden structure which it enclosed had been burned out. Evidence of structural strength in withstanding stresses due to falling floor, roof, fixtures, etc., as well as proof of resistance to fire.

Interior detail of above ruin. Note complete destruction of timber interior and bending of stucco shell at window in upper center of photo.

Another proof of the strength of cement stucco. Note fragment in foreground which has fallen from second story.

RUINS OF BERKELEY CONFLAGRATION OF OCTOBER, 1923

BERKELEY DISASTER DEVELOPS NEW TYPE OF FIRE-PROOF CONSTRUCTION—FABRICRETE*

by WALTER T. STEILBERG, Architect and Architectural Engineer

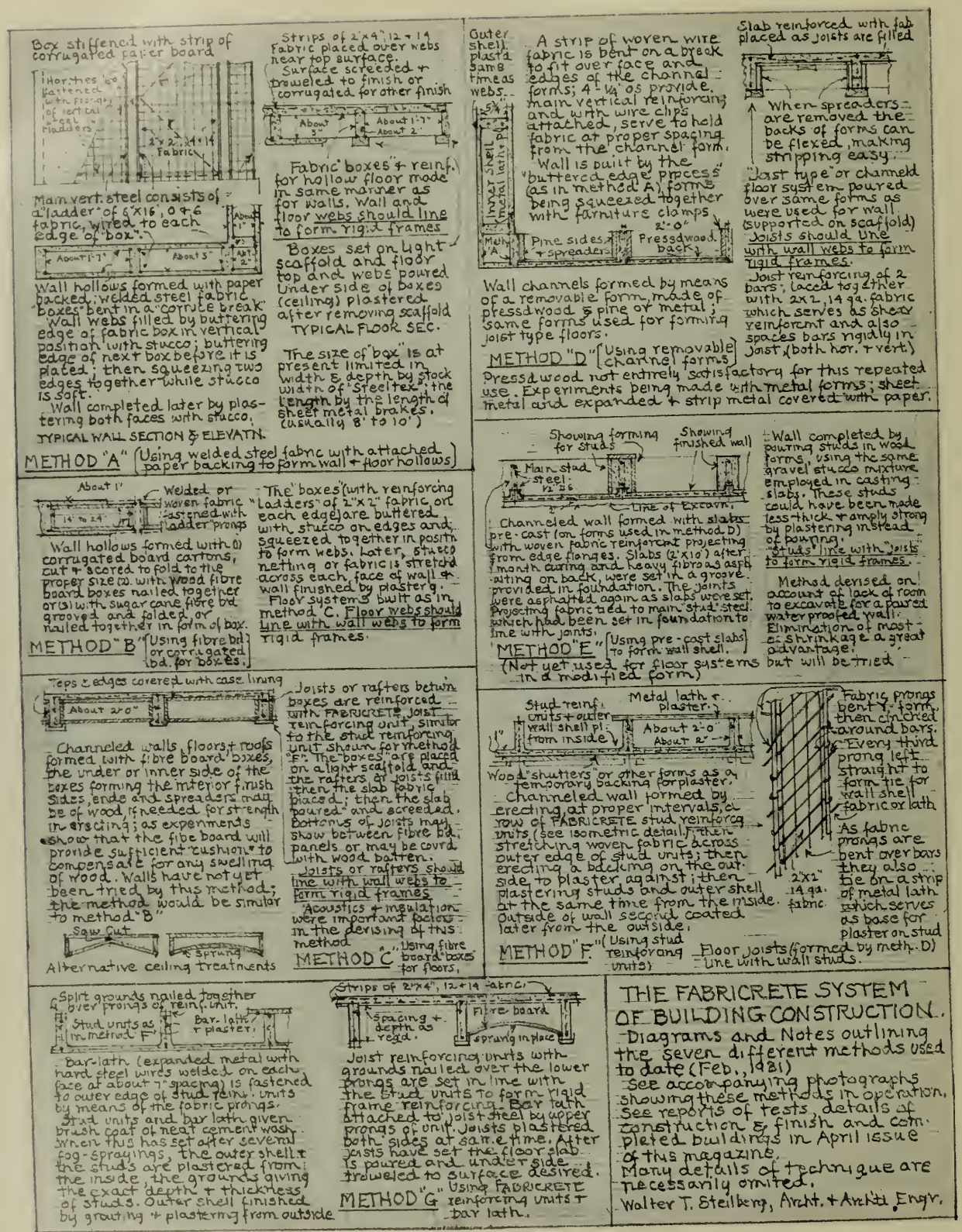
IN our large building construction,—in steel frame and reinforced concrete—there have been great advances; our small buildings of wood frame, brick or stone masonry are built as they were built several hundred years ago,—if as well. In planning, surface finish, and equipment, the modern home is, or can be, incomparably better than at any time in history; but the structure has remained fundamentally unchanged for centuries. There is a tendency in many fields of progress to first attack the larger problem. Telegraph lines were strung across continents before the telephone provided communication by wire within the cities; networks of railways covered Europe and United States before the first horseless carriage had gone its first mile; and, in the same way, the advance of modern structural methods for large buildings has preceded by at least forty years any corresponding development for small buildings. The telephone and automobile have become as important as the telegraph and railroad; the small building, as a factor in human life and as a scientific problem, is as deserving of study as the skyscraper or bridge.

The time has come to apply modern engineering and architectural knowledge to the problem of giving to relatively low buildings,—one to five stories high, and intended for light or medium live loads,—those advantages which the protected steel frame and reinforced concrete now provide for high or heavily loaded buildings:

1. Resistance to fire, either from within or without.
2. Resistance to earthquakes, storms, or other violent "acts of God".
3. Immunity to insect or fungus attack.
4. Freedom from large shrinkage, swelling, or settlement cracks or distortions.
5. Insulation, by the structure itself, against temperature and moisture changes.
6. Insulation, by the structure itself, against sound-transference.
7. Relatively small loss of floor space in partitions and walls.
8. Possibility of modifying many of the interior partition arrangements without affecting the structure itself.
9. Ease of providing space for the elaborate heating, mechanical, lighting and sanitary services that are so essential in all modern buildings.
10. Ease of providing for sanitary floor and wall surfaces and details of finish.
11. Speed of construction.
12. Shop fabrication of many of the structural members, thereby facilitating standardization of parts and rendering building operations more independent of weather conditions.

Furthermore, these great advantages should be gained without the cost greatly exceeding that of wood construction; without resorting to "stock" plans; without making use of elaborate machinery at the building site; without making demolition and removal too difficult; and without sacrificing the freedom of general and detailed design or the control of surface texture that is possible with the present method of using stucco over a timber frame. In order that these objects may be attained

*Abbreviation for a system of constructing buildings or parts thereof by plastering a fine aggregate concrete (gravel stucco) on properly designed reinforcement, consisting of rods, combined with expanded, woven, or electrically welded steel fabric; thereby forming thin, hollow, or channelled walls, floors and roofs. Primarily intended for buildings of light load occupancy.


Box stiffened with strip of corrugated paper board
Horizontal bands fastened with prongs of vertical steel ladders
2"x2"-14 Fabric
Main vert. steel consists of a "ladder" of 6"x16", 0+6 fabric, wired to each edge of "box".
About 1'-7"
About 5"
About 1"
Wall hollows formed with paper backed; welded steel fabric "boxes" bent in a "corrugated break"
Wall webs filled by buttering edge of fabric box in vertical position with stucco; buttering edge of next box before it is placed; then squeezing two edges together while stucco is soft.
Wall completed later by plastering both faces with stucco.
TYPICAL WALL SECTION & ELEVATN.
METHOD "A" (Using welded steel fabric with attached paper backing to form wall + floor hollows)
Strips of 2"x4", 12+19 Fabric placed over webs near top surface.
Surface screeded + troweled to finish or corrugated for other finish
About 5"
About 1'-7"
About 2"
Fabric "boxes" + reinf. for hollow floor made in same manner as for walls. Wall and floor webs should line to form rigid frames
Boxes set on light scaffold and floor top and webs poured
Under side of boxes (ceiling) plastered after removing scaffold
TYPICAL FLOOR SEC.
The size of "box" is at present limited in width & depth by stock width of "Steeltex", the length by the length of sheet metal brakes. (usually 8' to 10')
About 1"
14" to 24"
Welded or woven fabric "Ladders" fastened with ladder prongs
Wall hollows formed with (1) corrugated board cartons, cut + scored to fold to the proper size (2) with wood fibre board boxes nailed together or (3) with sugar cane fibre bd. grooved and folded, or nailed together in form of box.
METHOD "B" (Using fibre bd. or corrugated bd. for boxes.)
The "boxes" (with reinforcing "Ladders" of 2"x2" fabric, on each edge) are buttered with stucco on edges and squeezed together in position to form webs. Later, stucco netting or fabric is stretched across each face of wall + wall finished by plastering.
Floor systems built as in method "C". Floor webs should line with wall webs to form rigid frames.
Outer shell plastd same time as webs.
Inner shell plastd same time as webs.
Meth. A
Pine sides + spreaders
Pressdwood backs
A strip of woven wire fabric is bent on a break to fit over face and edges of the channal forms; 4"-1/4" as provide. main vertical reinforcing and with wire clips attached, serve to hold fabric at proper spacing from the channel form.
Wall is built by the "buttered edge process" (as in method A), forms being squeezed together with furniture clamps
2'-0"
Wall channels formed by means of a removable form, made of pressdwood & pine or metal; same forms used for forming joist type floors.
METHOD "D" (Using removable channel forms)
Pressdwood not entirely satisfactory for this repeated use. Experiments being made with metal forms; sheet metal and expanded + strip metal covered with paper.
Slab reinforced with fab placed as joists are filled
When spreaders are removed the backs of forms can be flexed, making stripping easy.
"Joist type" or channeld floor system poured over same forms as were used for wall (supported on scaffold)
Joists should line with wall webs to form rigid frames.
Joist reinforcing of 2 bars, laced together with 2x2, 14 ga. fabric which serves as shear reinforcement and also spaces bars rigidly in joist, (both hor. + vert.)
Showing forming for studs
Showing finished wall
Main stud steel: 1/2"x6"
Line of Excavn.
Channeled wall formed with slabs pre-cast (on forms used in method D) with woven fabric reinforcement projecting from edge flanges. Slabs (2'x10') after month curing and heavy fibre & asphalting on back, were set in a groove provided in foundation. The joints were asphalted again as slabs were set. Projecting fabric tied to main stud steel which had been set in foundation to line with joints.
METHOD "E" (Using pre-cast slabs to form wall shell.)
(Not yet used for floor systems in a modified form)
Wall completed by pouring studs in wood forms, using the same gravel stucco mixture employed in casting slabs. These studs could have been made less thick + amply strong by plastering instead of pouring.
"Studs" line with "joists to form rigid frames.
Method devised on account of lack of room to excavate for a poured water proofed wall. Elimination of most of shrinkage a great advantage.
Tops & edges covered with case lining
About 2'-0"
Channeled walls, floors + roofs formed with fibre board boxes, the under or inner side of the boxes forming the interior finish. Sides, ends and spreaders may be of wood, if needed for strength in erecting; as experiments show that the fibre board will provide sufficient "cushion" to compensate for any swelling of wood. Walls have not yet been tried by this method; the method would be similar to method "B"
Saw cut
Sprung
Alternative ceiling treatments
Joists or rafters betwn boxes are reinforced with FABRICRETE joist reinforcing unit, similar to the stud reinforcing unit shown for method "E". The boxes are placed on a light scaffold and the rafters or joists filled then the slab fabric placed; then the slab poured and screeded. Bottoms of joists may show between fibre bd. panels or may be covrd with wood batten.
Joists or rafters should line with wall webs to form rigid frames.
"Acoustics + insulation" were important factors in the devising of this method
METHOD "C" (Using fibre board boxes for floors.)
Stud reinf. units + outer wall shell pl. from inside
Metal lath + plaster
About 2'-0"
About 2"
Wood "shutters" or other forms as a temporary backing for plaster.
Channeled wall formed by erecting at proper intervals, a row of FABRICRETE stud reinforcg units (see isometric detail F) then stretching woven fabric across outer edge of stud units; then erecting a backing on the outside to plaster against; then plastering studs and outer shell at the same time from the inside. Outside of wall second coated later from the outside.
METHOD "F" (Using stud reinforcing units)
Floor joists (formed by meth. D) line with wall studs.
Fabric prongs bent Y form, then circled around bars.
Every third prong left straight to form tie for wall shell fabric or lath
As fabric prongs are bent over bars they also tie on a strip of metal lath which serves as base for plaster on stud
2"x2" 14 ga. fabric
Spirt grounds nailed together over prongs of reinf. unit.
Stud units as in method "F"
Bar-lath + plaster
Bar-lath (expanded metal with hard steel wires welded on each face at about 1" spacing) is fastened to outer edge of stud reinf. units by means of the fabric prongs.
Stud units and bar lath given brush coat of neat cement wash when this has set after several fog-sprayings, the outer shell + the studs are plastered from the inside the grounds giving the exact depth + thickness of studs. Outer shell finished by grouting + plastering from outside
Strips of 2"x4", 12+19 fabric
Spacing + depth as reqd.
Fibre board
Sprung in place
Joist reinforcing units with grounds nailed over the lower prongs are set in line with the stud units to form rigid frame reinforcing. Bar lath attached to joist steel by upper prongs of unit. Joists plastered both sides at same time. After joists have set the floor slab is poured and under side troweled to surface desired.
METHOD "G" (Using FABRICRETE reinforcing units + bar lath.)
THE FABRICRETE SYSTEM OF BUILDING CONSTRUCTION.
Diagrams and Notes outlining the seven different methods used to date (Feb., 1931)
See accompanying photographs showing these methods in operation.
See reports of tests, details of construction & finish and completed buildings in April issue of this magazine.
Many details of technique are necessarily omited.
Walter T. Steilberg, Archt. + Archtl. Engr.

DIAGRAMS AND NOTES OUTLINING VARIOUS METHODS OF FABRICRETE BUILDING CONSTRUCTION

WALTER T. STEILBERG, ARCHITECT

in the broadest sense, the materials employed should be readily obtainable and easily used by moderately skilled labor in any part of the civilized world.

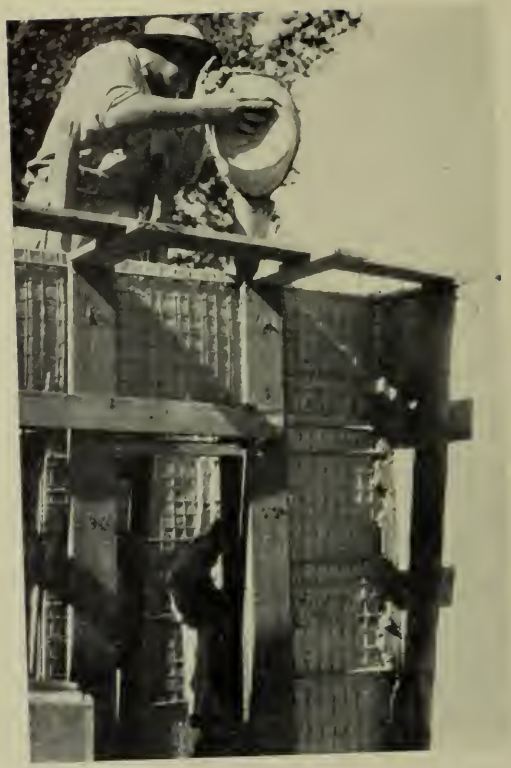
DURING the last thirty years, many solutions of this great problem (or rather, of certain phases of it) have been attempted: hollow walls of poured concrete, hollow concrete block walls, hollow brick walls, double walls of concrete blocks with steel ties, reinforced brick walls, concrete walls made with special steel forms, precast concrete roof slabs, truss joists and sheet-steel joists, light steel frames made of special shapes, steel deck boarding, concrete made lighter by "aeration" in mixing or by using aerated aggregate like haydite or pumice stone;—not to mention the hundreds of fantastic schemes advanced by persons totally ignorant of building construction.

It is noteworthy that, in most of these attempts, much attention has been given to weight reduction, either by forming hollows in the walls or by enclosing air bubbles in the wall materials; or by reducing the weight of the floor systems to the absolute minimum required for light load occupancies. It is even more significant that practically all these improvements are in materials or devices for making certain parts, rather than for systems of constructing an entire building. A large steel frame or reinforced concrete building is a co-ordinated, well-joined structure; a complete thing in itself, capable of sustaining lateral pressures as well as vertical loads, fire-proof as to floors and roof as well as to walls and partitions. The joinings and splicings of structural members are no less important than the members themselves; furthermore, the joints serve to transfer to vertical members the stresses which originate in horizontal members, and vice versa. This vital importance of joints and their stress-transferring property is fully recognized in the proper design of large buildings; but has been given scant consideration in the numerous proposed improvements for constructing small buildings; which, as I have indicated, consist chiefly of various new materials or methods for building walls upon which any kind of floor or roof may be supported; or various novel forms of steel beams or reinforcing for floors or roofs which may rest upon any kind of supports. The so-called "steel frame house" is something very different from the well-co-ordinated, thoroughly fire-proofed column-and-beam structure used in our skyscrapers; it might more exactly be described as the "steel stud house", being in reality a metalization of the traditional platform type of wood frame, with metal lath and plaster forming the only fire protection of its very light steel studding and joists.

IT was the Berkeley conflagration of 1923 which impressed upon me the urgent need for a basic improvement in "small-scale" construction; and also suggested a possible solution of the problem. Of the six hundred houses which burned, little was left, save ashes and chimneys; but in a few instances the outer stucco shell remained standing, even after the rest of the house had been completely destroyed. (See accompanying photographs.) This exhibition of the strength of ordinary stucco suggested to me the possibility of constructing walls entirely of stucco; hollow walls, in which an exterior stucco shell would be united to an inner one by vertical webs of the same material.

Properly reinforced, such a wall would have its material "distributed" in the most efficient manner;—that is, near the outer surfaces, and, in proportion to the material required, would be far stronger than a solid wall; just as a pipe is stronger than a solid rod of the same weight. The exterior and interior plaster, heretofore used for finish purposes only, would be "put to work". The structure would, in engineering parlance, consist of a series of light, rigid frames,—closely spaced and well tied and braced by the wall shells,—not unlike ship construction and specially well suited to resist earthquake shock. Furthermore, the hollow spaces between the webs would make the wall very light, easy to dampproof and insulate against heat-transmission and condensation, and would provide space for plumbing pipes, heating ducts and electric conduits, and even for cabinets

Electrically welded fabric with an attached paper backing was bent in a sheet metal break to the form of long rectangular tubes or boxes, the length of boxes being the wall height.



The spaces between edges of cells were covered with wood strips and filled with stucco, thus forming the studs or webs of the wall.

These boxes, stiffened by a zig-zag strip of corrugated board, were then set in position in the wall as shown above, about two and one-half inches between edges of cells. The concrete joist floor and roof systems line with the wall webs, thus forming a series of rigid frames.

CONSTRUCTING STUDIO AT LOS GATOS, 1929, BY FABRICRETE METHOD A

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and cases; openings could be easily formed by stopping the outer and inner shells at properly spaced webs.

The general form of the structure and its essential materials having been selected, I first directed my attention to the development of a cement stucco which would be strong, workable, waterproof, and as free as possible from shrinkage cracks. Laboratory studies of the various sands available led to the "design" of a stucco which, when damp-cured, indicated at twenty-eight days an ultimate compressive strength (in cylinder tests) of 2,000 to 2,400 pounds. Subsequent field experience with this stucco has led to numerous improvements in its composition, reinforcement, methods of application, and curing, and manner of testing; —all of which will be fully described later.

The next problem was to devise an inexpensive means of constructing the cellular wall and a suitable floor system which could be coordinated with it; and in particular a means of forming the hollows without embedding or enclosing in the walls any wood in such a way as to cause cracks in the stucco shells by swelling or shrinking. In the pioneer days of reinforced concrete it was suggested that stucco might be used structurally; and there have been many schemes for constructing hollow walls of "cementaceous" material, several of which have depended on the use of the cement gun for the filling of the spaces between the hollows. However, none of the devices of which I found record seemed entirely practicable; and it is significant that none have to any extent been used in practice. Five years of experimenting, co-related with actual building construction by this system, have led to my developing seven different methods for the solution of this problem.

All of these methods of constructing hollow walls and floors, or very thin section channelled walls and floors, of "structural stucco", have been tried with full sized specimens; all, excepting method B, have been or are being used in actual building construction, as illustrated in the accompanying drawing and photographs. Each method has its advantages and limitations; which is the best, all things considered, I am not yet prepared to state. As has been intimated in outlining the problem as I have thought of it, there are many things which require the most careful consideration; — problems of architectural design, acoustics, insulation, interior and exterior finish, door and window details, and the installation of electrical heating and plumbing equipment,—as well as problems of structural strength, economy, waterproofing, durability, and fireproofing. My present opinion is that Method G has distinct advantages in that it dispenses entirely with forms and requires very little floor scaffolding; service installations are easy, the web spacing may be anything desired up to 36″, and the thickness of the hollow wall may be anything from 4½″ to 20″; the depth of joists forming the rigid frames with the webs may be anything from 3″ to 20″; the grounds may be left attached to the inner edge of the wall webs and the bottoms of the joists and used as nailing strips for wood or fiber-board panelling, or the grounds may be removed and the wire prongs between them used for attaching metal lath for any kind of plastering or marble or slate surface plastering that may be desired. However, my preference for Method G has not yet been put to test by a completed building; a residence is now being built by this method in Berkeley.

I do not mean to give the impression that this system, in any of its several methods, is merely experimental and not yet usable for practical building work. Poured reinforced concrete is being improved every year, but it has been successfully used in thousands of buildings since the beginning of the century. I do not presume that any of the methods herein described is the final answer; — there will probably be as many answers to this problem as there have been to the problem of propelling a vehicle with a gasoline engine; but my experience in the design of large reinforced buildings as well as with this structural use of stucco, leads me to believe that within the next decade some such cellular or channelled monolithic sytem of construction will be developed and widely used.

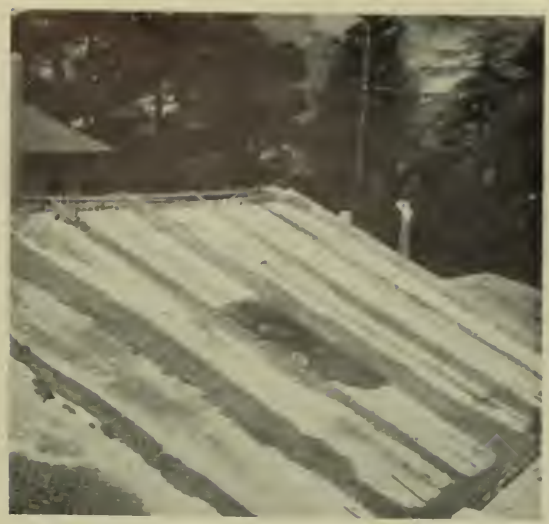
Paper-backed steel fabric boxes in place for main story. After the webs were poured and the strips removed, the wall was completed by plastering the inner and outer faces. Door and window frames were plastered in as the work progressed. In a later development of the same method, the boxes were buttered on the edges and squeezed together as they were put in position to form the webs, thus eliminating pouring.

Nearing completion. Tile roof and pergola beams not yet in place. Pergola columns made by bending a cylinder of steel fabric and plastering to one inch thickness. Flower bed wall made by plastering fabric on one side, peeling off paper and then plastering the other side.

STUDIO FOR CHARLES ERSKINE SCOTT WOOD AND SARA BARD FIELD, BERKELEY

CONSTRUCTED IN 1928 BY FABRICRETE METHOD A

Fibre board boxes, covered on top with case lining paper; rafter steel and ridge girder steel in place. Concrete being pushed and rodded into place in rafters and girder before placing slab netting.



Rafters filled. First three-foot width of slab netting (18 ga., one inch hex.) being placed. Black patch indicates place where workman put foot through top of one of the fibre board boxes which will bear weight of man crawling or sitting but not standing.

Slab netting in place. Note rods between rafters holding netting to bottom of slab in center of span. Slab concrete being poured.

Slab concrete screeded off to one and one-quarter inch thickness. Ridge girder being filled; netting to lap over ridge to form tie.

ROOFS AND CEILINGS OF HOUSE AT NO. 6 MOSSWOOD ROAD, BERKELEY

CONSTRUCTED BY FABRICRETE METHOD C

Two channel forms with stucco netting bent around edges at face and reinforced with bars as shown in detail. Edge of channel being buttered with stucco.

Plasterer in foreground buttering edges of channel preparatory to placing it against buttered edge of preceding channel form.

Channel form with buttered edge being placed in position in wall. The two buttered edges are then squeezed together with furniture clamps to form the stud or web.

When several studs are formed and before their material has its initial set the outer shell of the wall is plastered on as shown above. Openings are left unplastered and the netting cut afterwards and bent in to form the reveal.

HOUSE AT NO. 4 MOSSWOOD LANE, BERKELEY

CONSTRUCTED BY FABRICRETE METHOD D

Excavation cut to two inches outside of wall. One-half inch stud bars set at two-foot centers in poured concrete foundation. Hollow tile drain back of wall.

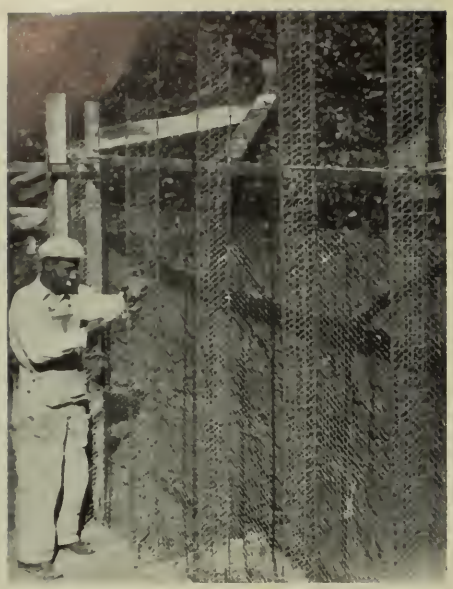
Casting wall slabs on channel forms used in Method D. Slabs reinforced with stucco netting bent to form shown in detail drawing on page 80.

Slabs (cured for one month and waterproofed on back and edges with asbestos fibred asphalt) set on end (by three men) in groove in foundation wall. Projecting netting wired to stud steel.

Forms for studs, which were poured; same material as in slabs. Same forms were used on other half of garage.

BASEMENT OF RESIDENCE AT MOSSWOOD ROAD AND PANORMIC WAY, BERKELEY

CONSTRUCTED IN 1929 BY FABRICRETE METHOD E



Web reinforcing, consisting of 2¾" bars, rigidly tied together with 2x2" fabric and strips of stucco netting, were set 2' o. c., the bottoms being wired to dowels, the top to an aligning strip on a scaffold. Stucco netting was then stretched horizontally across the outside of studs (just as fence wire is stretched) and fastened by projecting prongs of the stud fabric. A backing of wood was erected at the proper distance from the netting on the outside of the wall; the outer shell of the wall was then plastered from the inside as shown above; the studs being plastered at the same time against a board tied to one side as backing. The channeled wall thus built was finished with a second coat of stucco on the exterior, and an inner shell of metal rib-lath attached with the stud fabric prongs and plastered two coats of cement stucco. Concrete floor joists and roof rafters intersect with wall webs to form "rigid frame" construction.

CONSTRUCTING WALLS BY FABRICRETE METHOD F.

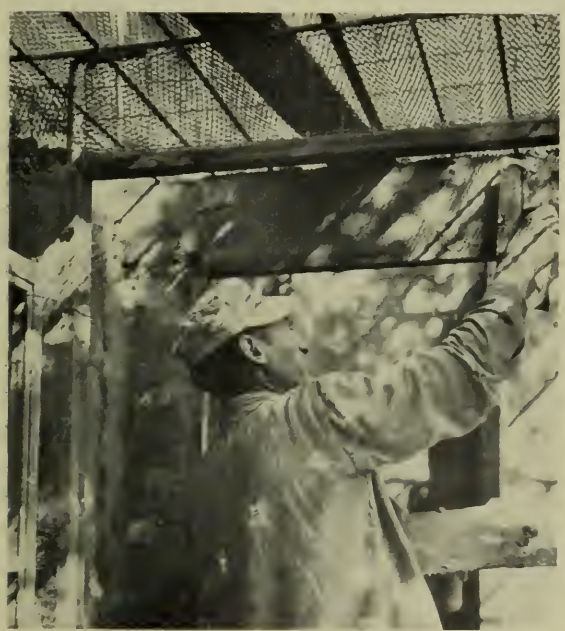
GARAGES AND APARTMENT AT 6 MOSSWOOD ROAD, BERKELEY

NEARING COMPLETION, FEBRUARY, 1931

Walls constructed partly by Fabricrete Method D, partly by Method F. Concrete floor joists formed with the channels used in constructing walls. Roof constructed by Method C. Roof and floor systems co-ordinated with wall webs. Tile roof and sills, steel sash, canvas curtains instead of garage doors. The balcony is made a habitable feature of the apartment by using a high glazed rail.

Web reinforcing units with grounds fastened to inner edge were set at proper intervals in foundation. Joist units with grounds on lower edge set in line with webs. Bar lath fastened to outer edges of webs and tops of joists. A brush coat of neat cement is applied as a protective coating and an absorbent of excess water in stucco.

Plastering webs and outer shell of wall with structural stucco wood grounds, split and nailed over web steel prongs, establish exact thickness and depth of web.



Plastering joists with structural stucco. Plastered both sides within an hour by using a board backing for the side first plastered. Floor slab poured when joists and wall webs have sufficient strength to take load. Joists and under side of slab may be left rough plastered or finish plastered; or ceiling may be wood paneled or finished with fibre board panels sprung between concrete beams.

Outer shells, webs and joists plastered. Steel sash and frame set. Bar lath of outer shell cut and bent in to form reinforcing of head and sill. Web grounds may be left to serve as nailing strips for wood or fibre board paneling. Or grounds may be removed and wire prongs used as ties for bar lath for interior plaster or stucco.

The ARCHITECT'S VIEWPOINT

¶ *The Los Angeles Stock Exchange*

¶ *Anent the Mayan Style*

¶ *New California Club a Scholarly Design*

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THE new Stock Exchange in Los Angeles has attracted much attention and brought about extensive comment both favorable and critical. In many ways the building is outstanding in its simple effectiveness and dignified proportions. It is doing more than its share in the rebuilding of the financial district of Los Angeles to change Spring Street from one of dull mediocrity to that of architectural achievement.

Its comparatively low front mass is an effective vestibule or narthex for the limit height portion in the rear and each part emphasizes the other. The facade has the effect of being practically free from window openings which brings the beautifully detailed bronze doorway into striking and most successful importance. In detail the building is the sort of thing that the Greek savants of Phidias' time would have understood had they known the purpose of the structure, though the sculptured reliefs, successful enough for their purpose, fall short of the standard set by the architectural detail. It is surprising, however, that they are as good as they are when one takes into consideration the artistic limitations of contemporary clothes worn by man. The design in general emphasizes the truth of the words spoken at the last convention of the American Institute of Architects at Washington that "the best of modern Architecture resembles the best of that of the past." Quotation not verbatim but the sense is there.

* * *

THE interior of the Stock Exchange Building shows the results of careful and skillful planning. Every portion seems to be in the proper place and one does not question the building's practicability. As to adornment it leaves one with the impression of over elaboration or with "too much vibration," to use the spritely modern phrase. Form and color here take on more of today's vocabulary and one wonders what one's impressions of it would be twenty years from now. The general interior scheme does, however, show careful study and if or when this style of designing ceases to be the fashion the interior decorations of the Stock Exchange will be an outstanding example of the tenor of artistic inclination of our present decade.

The building in general shows what can be done within the limitations of the Los Angeles building height limit. The proponents of more height allowance are still working to have the lid removed or at least blown into the air and that despite the sane arguments for keeping the limit of usable cubic contents as it is. They argue for more civic beauty, more picturesqueness, as well as for the opportunity to obtain more rentable area on a given space of ground. It is not my purpose here to discuss the polemics involved but it does seem that the present height limitations can and do stimulate the imagination and ingenuity of the designers to a remarkable degree. The aesthetic question seems

solved by allowing towers and pent houses to be added in size beyond practical requirements. The possibilities for beautiful composition thus engendered are limitless as exemplified when looking east on Fifth Street from the vicinity of the Central Library Building. The beautiful mass of the new Edison Building at Grand Avenue and Fifth Street, together with the retaining wall and stairway opposite the Library, and the tower of the Title Guarantee Building now under construction at Hill and Fifth Streets, show what can be done to make our street vistas beautiful and impressive and that within the present limitations.

* * *

CONCERNING the beautification of our business streets much could be done if they could be made more orderly. Even an ordinary building would be attractive if scrupulous care were taken with sign boards, illuminated advertising signs and the like. At present our streets are a riot of such disorder, with wooden poles for electric service contributing to the discord. If in some way this agonizing mass of nerve-racking vulgarity could be eliminated, or at least restrained the problem would be ninety per cent solved.

* * *

A SERIOUS attempt is being made here in the west to break away from ancient precedent by trying to design buildings in the Mayan style. Just how far this will be successful remains to be seen. So far the method seems to be to adorn the faces of surfaces of structures with details copied from the ruins of Uxmal, Chichen-Itza and the prehistoric ruins of Guatemala. Whether the results attained are pleasing or not may be left to the taste and inclinations of the observer but there is no question that this skin-deep ornament has very little to do with the structural or functional architecture of the buildings thus clothed.

The style, if it is a style, might be appropriate enough for a building dedicated to theatrical or moving picture purposes—one's mind can be twisted around to imagine it as a sort of permanent stage scenery to advertise the purpose of the building. That is excuse enough. Hollywood Boulevard has like examples in Chinese and Egyptian styles, not to mention others, which are delightful and that because they are appropriate to the purpose involved. Used in other ways, the Mayan style seems just one more disonant element added to our already overworked sense of sight. If a hotel, for instance, is in the Mayan style just to be "different" and to attract attention, the artistic standard of the building sinks to the level of a sign board and lays itself open to be judged accordingly.

More excuse may be found for adapting the characteristics of the Hopi and other like Indian structures, especially to certain arid sections of the Southwest. These Indians are living with us at the present time and are a part of our civilization. People like living in imitation Pueblo Indian houses the same way that they get a thrill out of living in Spanish and Italian imitation peasant houses, but it is beyond one's imagination to feel at home in a sham Carcel de Chichen-Itza.

* * *

WITH relief we turn from the exotic to the sane sobriety of the new California Club recently finished after the scholarly design of Robert D. Farquhar. A quiet building in deep buff brick relieved with limestone ornamentation and one of large proportions for a Club house, it expresses in every way the standard of the Club that occupies it. The interior is of obviously good planning with large simple spaces finished in beautiful oak panelling, carefully selected marbles, good color and appropriate furnishings, a home for gentlemen and that without ostentation. Like good wine, this successful building will improve with age and always be an important element in the architectural group surrounding the central library building.

CARLETON MONROE WINSLOW, A. I. A.

BILLIARD ROOM

LOUNGE AND RECEPTION ROOM

DRAFTING ROOM FOR THE ATELIER

NEW HOME OF SAN FRANCISCO ARCHITECTURAL CLUB

THIRTY years ago a few ambitious young men of the architectural profession gathered at the old Builders' Exchange, Mission and New Montgomery Streets, San Francisco, and organized the San Francisco Architectural Club, an event which marked the birth in the Bay city metropolis of a serious attempt at systematic architectural study among the young men of the profession.

The club rented quarters in a small room located in what was known at the time as a semi-lodging house on McAllister Street, near Market. There some twenty members, according to tradition, learned to mix colors in the flowing bowl, much to the dissatisfaction of the landlady. A change of meeting place became not only desirable, but imperative, and soon the organization found a new home on the top floor at 425 Montgomery Street (over Hjuls), known at the time as the honor-system restaurant man. All this transpired before the fire of 1906.

The membership by this time had climbed to 30 members and a fine comradeship developed. The fire, in common with many others, left the club with a heap of ashes and little insurance money, causing a bitter struggle for its existence, but with a supreme effort it finally housed itself on the top floor of the Mercantile Library Building, corner of Van Ness and Golden Gate Avenues. But such were local conditions at that time, coupled with the uncertain membership and indifferent management, the foundation of the organization nearly crumbled out, and as a last effort consolidation was made with the Press Club of San Francisco.

This did not prove entirely satisfactory, but it was a move that at least guaranteed its existence. The fundamentals of the club proved so contrary to the aims of the Press Club that after a year of trials, covering many debates and heated meetings, in which club politics played a great part, it was voted to sever connection with the Fourth Estate boys and quarters were leased on the fourth floor, 126 Post Street.

The membership at once took a healthy leap forward. It was during the heyday of preparation for the Panama Exposition, bonanza days indeed for draftsmen, which was reflected by increased usefulness and activity of the club.

Then came the hectic days of the great war, a period when work was scarce, when members were responding to the call of country, and when a rise in rentals caused a consideration once more of ways and means, and the area of the quarters had to be cut down to one room, until finally another move was made to 77 O'Farrell Street with the Building Material Exhibit. Here sumptuous quarters were enjoyed and well patronized, and once more the club was passing through a season of prosperity.

Again a change was inevitable and the club found a new home at 523 Pine Street. Here excellent accommodation was found for classes and Atelier facilities, but the surroundings were not so desirable for the social activities and general club life.

Towards the end of 1930 it became increasingly evident that if the membership was to be kept together, and any forward move made, better and more centrally located quarters must be found. Persistent search and the inspection of many buildings, finally resulted in a decision to lease the entire fourth floor at 130 Kearny Street. Under a well arranged plan, designed by the members themselves, the present quarters now consist of a fine entrance lobby, a well-lighted and clean Atelier, a library containing one of the most complete collections of architectural works in the country, and a number of the best current architectural magazines; a cheerful, pleasant, and comfortable lounge, with billiards, pool, piano, radio, chess and other games, a small, but serviceable, class room, and a kitchen arranged to take care of social functions.

Much of the actual construction of the quarters was done by members of the club out of employment, under the direction of President Ruegg. The furnishing was directed by Felix A. Raynaud, and it is really marvelous what cheerfulness and comfort, with a sense of artistic refinement, were produced at so little expense. Gifts and donations came in from many sources and the assistance from the Architects' Asso-

ciation and material houses and contractors are fully appreciated and gratefully acknowledged by every member of the organization.

A sense of loyalty and pride in the club was the impelling factor that united the members together in this commendable task of re-organization and every lick of work was cheerfully undertaken.

The principles for which the club is organized have a two-fold purpose: A social club for architects, architectural draftsmen and men of kindred interests and closely associated occupations, a place where ideas may be exchanged and friendships formed—where a member can cheerfully entertain a friend and find all the comforts of a well organized institution. It is also an educational institution because it aims to develop the talent of its members, providing many opportunities for study and advancement in subjects pertaining to the practice of architecture. The class in architectural design, following the courses and doing the problems outlined by the Beaux Arts Institute of Design of New York, offers the only opportunity for a man to study the subject systematically outside of a university. Many aspiring architects have availed themselves of this opportunity and spurred on by their success in the Atelier have continued their studies in the finest schools. In 1919 Ernest E. Weihe, then a student of the Atelier of this club, in competition with students all over the United States, won the coveted Paris prize in architecture, whilst nine scholarships have been won by the club members in ten years, a record hard to beat. The club is also proud of the fact that Louis C. Rosenburg, world famous etcher, and Ernest Born, equally famous delineator, were members of the organization.

A great majority of the architects and draftsmen in this part of the State have, at some time, been affiliated with the club, and gratefully acknowledge the influence of the patrons of the Atelier on their work and their lives. In every architect's office in San Francisco may be found draftsmen who express their appreciation for the help and inspiration received from the present patrons, Edward Frick and Ernest Weihe.

In addition to the Atelier the club maintains a class preliminary to the course in designs in which orders are studied, drawn and rendered. A class in structural engineering is also conducted regularly. Classes in History of Architecture, Free Hand Drawing from Life, Out-Door Sketching, Water Color and Full Size Detailing are conducted alternately as needs arise.

And it is fitting that a word should be said in appreciation of the active support the club has always received from the local architects' associations, and at the present time is actively co-operating with the California State Association of Architects in the successful development of an employment registration service. The San Francisco Architectural Club always maintained an employment service, which functioned more or less indifferently, but now an opportunity for greater usefulness is presented.

In this brief outline of the history and activity of the club one can readily understand the development of traditions that are a lasting memory to anyone who has ever been associated with the organization. One can appreciate also that ideals of service must be firmly established and that the aims and purposes of the club are ever foremost in the minds of its officers, always remembering that the San Francisco Architectural Club is not simply a draftsman's organization but an institution vitally interested in the artistic development of the community.

The officers of the club for the year 1931 are as follows: Ira H. Springer, President; C. Jefferson Sly, Vice-President; Donnell E. Jaekle, Secretary; S. C. Leonhaeuser, Treasurer; F. Marshall Sanderson, Executive Secretary. Directors are W. Helm, W. E. Mooney and S. Willard. Under their able guidance the club is headed for a year of increased prosperity. A membership drive now in progress is making headway, many new recruits have been enrolled.

* * *

On Wednesday evening, February 18th, the official dedication of the new quarters took place. By special invitation and request the meeting was in charge of officials of the California State Association and the San Francisco Chapter of the American Institute of Architects.

Harry Michelson, chairman of the evening, outlined briefly the history of the club and paid high tribute to the men who in former years carried on its traditions and are now leaders in the profession.

John J. Donovan told the members they are the future standard bearers of the profession.

William C. Perry, Dean of the School of Architecture at the University of California, spoke of the influence in shaping the destiny of the club, of such men as Arthur Brown, John Bakewell, George Kelham, and others, and how the men who received training at their hands are now carrying on, giving of their time and their talent in turn to help the younger men who are now studying in the club.

Other speakers included Major Robert, Supervising Architect's office and Norman W. Keltch of the Clay Products Association and a member of the Los Angeles Architectural Club.

WITH the ARCHITECTS

STOCKTON HOTEL

Preliminary plans for a $1,000,000 Class A store and hotel at El Dorado and Oak Streets, Stockton, have been prepared by Oscar R. Thayer, architect, 110 Sutter Street, San Francisco. The promoters are a corporation headed by A. B. Cohn and Desmond E. McCabe, the latter with offices in the Hobart Building, San Francisco. The proposed hotel will cost $1,000,000 and will have 152 rooms in addition to thirty apartments of from two to six rooms each. The building will have sixteen stories.

POMONA HOTEL

Wm. Mooser Company of Santa Barbara and San Francisco, have prepared plans for a $200,000 Spanish type hotel to be built on a 15-acre site in the San Jose Hills, west of Pomona. The project is being sponsored by the California Realty Investment Corporation, 615 Broadway Arcade Building, Los Angeles.

OAKLAND STORE BUILDING

A contract has been awarded to R. W. Littlefield, 337 17th Street, Oakland, to build a two-story and basement concrete and terra cotta store building at 1717 Broadway, Oakland, for Mrs. Phillip E. Bowles. Plans were prepared by Douglas D. Stone, Howden Building, Oakland.

MORE STATE BUILDINGS

Ralph Wykoff of San Jose, has been commissioned by the State of California to prepare plans for a new Science Building at the State Teachers' College, San Jose, and Charles F. B. Roeth will prepare plans for an addition to the State School for the Deaf, Berkeley.

UNIVERSITY BUILDING, LOS ANGELES

Bids have been completed by Douglas H. McLellan, Architects' Building, Los Angeles, for a Class A three-story dormitory to be built on the Campus of the University of California at Los Angeles. It will cost $300,000.

THEATER ALTERATIONS

Frederick H. Meyer is preparing plans for remodeling the Golden State Theater at 4631 Mission Street, San Francisco, at an approximate cost of $50,000.

STOCKTON APARTMENTS

Plans for the reconstruction of Senator Bogg's five story apartment building, recently gutted by fire in Stockton, are being prepared by Joseph Losekann, architect of that city, and remodeling work will be rushed. Construction will be handled by Art Towne, local contractor, the work to cost in the neighborhood of $200,000.

OAKLAND ARCHITECT BUSY

New work in the office of B. J. S. Cahill, Oakland, includes the first unit to a crematory and columbarium at Diamond Head Memorial Park, Honolulu, and further extensions to the columbarium in Cypress Lawn cemterey, San Mateo County, California. Mr. Cahill is also busy on other work of a similar nature.

OAKLAND APARTMENTS

Leonard H. Ford, 1436 Harrison Street, Oakland, is preparing working drawings for a six-story, steel-frame apartment building estimated to cost $160,000. Mr. Ford has recently awarded segregated contracts for alterations to the four-story Class C hotel at Telegraph Avenue and Durant Street, Berkeley, for the Hotel Carlton.

BERKELEY SORORITY HOUSE

Plans have been completed and a contract has been awarded in the office of Edwin L. Snyder, architect, for a two-story, basement and attic English type sorority house, to be built at 2400 Piedmont Avenue, Berkeley, for the Alpha Delta Pi.

SUNSET DISTRICT HOMES

Twelve two-story frame and stucco dwellings are to be built in the Sunset District, San Francisco, from plans being prepared by Fabre & Hildebrand, architects, 110 Sutter Street, San Francisco. Houses will cost from $6500 to $8500 each.

WATSONVILLE ARCHITECT BUSY

A. W. Storey, Pajaro Valley National Bank Building, Watsonville, has recently completed plans for two large residences, one for W. E. Crockroft to cost $35,000, and the other for J. E. Porter to cost $25,000. Both houses will be in Watsonville.

FRANK LLOYD WRIGHT EPICS

"We are a self-conscious nation and we are afraid to create. We follow moth-eaten styles and modes because we have no faith in our artistic ingenuity. We are cowardly."

"Propogandists pro and con classify old as new and new as old; historians as usual tabulate their own oblique inferences as fact."

"Most of our architects are peddlers of imitations, connoiseurs of antiques."

"Present architecture is not expressive of the American mind or of its people."

"Washington pseudo-classic architecture behind the ears cannot make it modern."

"We must not dramatize the machine but dramatize the man."

"Buildings in our own age should no more look like machines than machines need look like buildings."

"Ideas of bad technique are abortions."

"American wealth has given the future no architecture worth keeping nor none that the future will keep."

"The only architecture we have today is industrial."

"Architecture was never old and never will be new if it is architecture."

"The gas station is the yellow dog of architecture and architects ought to do something about it."

"Next to farmers, architects can pull away from each other better than any other group."

AUGUST WACKERBARTH, ARCHITECT

August Wackerbarth, architect, who practiced in Los Angeles for nearly a half century, died of a heart attack at his home, 956 Court Circle, Los Angeles, February 21, aged 71 years. He was born at Hesse, Germany, May 8, 1859, and was educated at technical schools in that country, receiving a diploma in architecture from the Polytechnic Institute at Langensalza, Saxony. At 19 he came to America, going from New York to Independence, Ia., and thence to Chicago. He arrived in Los Angeles from the latter city November 22, 1882, and began the practice of his profession.

Mr. Wackerbarth was one of the founders of Southern California Chapter, American Institute of Architects, and served for many years as treasurer of the organization. He retired from active practice 14 years ago and since had devoted much of his time to the Los Angeles County Pioneer Society, of which he was a life-long secretary.

Mr. Wackerbarth was a member of various Masonic bodies, including the Royal Arch, Los Angeles Commandery and Scottish Rite.

ARCHITECTURAL LEAGUE EXHIBITION

Celebrating a half-century of progress in architecture, the exhibition of the Architectural League of New York, to be held at Grand Central Palace next month in conjunction with the Architectural and Allied Arts Exposition, is looked forward to as an event of especial significance. It is the fourth biennial exposition of its kind at which architecture and kindred arts of sculpture, mural painting, landscape architecture and the decorative arts are exhibited along with products of the building industries. The exposition will be held under the joint auspices of The Architectural League of New York and the American Institute of Architects with the endorsement of The Society of Beaux-Arts Architects and the New York Building Congress.

Raymond M. Hood, President of the Architectural League, in announcing the exposition, referred to it as an educational opportunity for the public. He said: "In view of the general interest and educational stimulus which such an exhibition must encourage and foster, representing the superlative expression of the fine arts, on the one hand, and their practical application to the every-day life of our people on the other, the exposition will have a far-reaching effect. Increased public appreciation is certain to follow this display of vital inventive and constructive elements, tending toward the improvement of taste and the development of better and more beautiful buildings throughout the land."

CLASS IN ARCHITECTURE

Emphasizing study of the latest trend in modern architecture as expressed in England, Italy, Spain, France, Germany and Holland, a traveling class is announced for this summer by the University of Southern California, to be in charge of A. C. Weatherhead, dean of the Trojan School of Architecture. Recent work in New York, on the Pacific coast and in other American cities and sections will be contrasted with developments in Europe.

Termed a "vagabond's tour,," the transnational educational trip, available to men only, is limited to architects and students of architecture and the allied arts. Members of the party will be special guests of the Paris Beaux Arts, the Fountainbleau summer school, and of the American Academy in Rome. Lectures will be included, as six units of college credit will be granted to those who complete satisfactory requirements.

The tour is non-profit-making and non-commercial, and an important educational feature of the School of Architecture of the University of Southern California.

PERSONALS

Scott Quinton has moved his office from 310 Medical Building, Alhambra, to Rooms 329-31 Edison Building, corner of Third and Main Streets, Alhambra.

Jonathan Ring has moved his offices from 1017 California Reserve Building, Los Angeles, to 1611 Marengo Avenue, South Pasadena.

Lester A. Cramer, formerly of the firm of Cramer & Wise, announces the removal of his office to 6363 Hollywood Boulevard, Los Angeles.

R. L. Warren, Emporium Building, Whittier, has been appointed consulting architect for the Whittier Union High School District.

E. Charles Parke of San Bernardino announces that he has moved his office from the Katz Building to Room 8, Fuller Building, in that city. Mr. Parke has just started the preparation of working drawings for a new grammar school building at Indio to cost $44,000.

Charles I. Carpenter, architect, has moved from the Empire State Building to the Sun Life Building, Spokane, Wash.

A. N. Torbitt, architect of Longview, Wash., has opened an office for the practice of his profession in the Empire Building, Seattle.

C. Ferris White, architect, has moved his studio to the Dochester Building, Everett, Washington.

OAKLAND POSTOFFICE BUILDING

Plans for Oakland's new $1,500,000 postoffice building will be ready and the contract awarded fifteen days before the excavating and foundation work, now in progress, is completed, according to an announcement in Washington, D. C.

Plans for the superstructure of the building have progressed to a point where only a few details remain to be finished before a call for bids is issued.

It is expected that the contract will be let on April 15. George Peterson of San Leandro, contractor for the excavation work, expects to finish his part of the work on April 28.

The supervising architect at Washington also announces completion of preliminary sketches for the addition to the Berkeley postoffice building. A contract for this project will likely be awarded June 1.

WINNER IN COMPETITION

Frank W. Bergman of San Francisco, has recently been awarded first prize for murals to be painted in the new steamships, President Hoover and President Coolidge for the Robert Dollar Steamship Company. There were six other competitors for this work.

A LETTER FROM ROBERT H. ORR, ARCHITECT OF LOS ANGELES

Dear Mr. Jones:

Let me congratulate you upon the fine presentation The Architect and Engineer is making. At one time, it seemed that architectural supremacy in magazine production belonged to the east. I am happy to observe that the west is producing an architectural medium that compares with all others.

Since taking on the Presidency of the State Association work I find plenty of opportunity to expand my energy and keep others employed likewise. On February 21 eight executives come from the north for an all-day conference upon our activities.

We have launched a movement to call a one-day convention of all State Associations to precede the Convention of the American Institute of Architects. While it is too early to give definite news so far all seems favorable for such a program.

Again expressing my appreciation of the good magazine you are producing, I remain,

Yours sincerely,

Robert H. Orr.

ARCHITECTS FOR STATE WORK

Frederick H. Eley, 316 Otis Building, Santa Ana, has been commissioned by the State Director of Public Works to prepare plans for a building to be erected at Pacific Colony, Spadra; cost $55,000.

G. Stanley Wilson, 3646 W. 9th Street, Riverside, commissioned to prepare plans for a dairy building to be erected at Patton State Hospital; cost $25,000.

Walker & Eisen, 1117 Western Pacific Building, Los Angeles, commissioned to prepare plans for a building to be erected at Pacific Colony, Spadra; cost $75,000.

Gilbert S. Underwood, 1404 California Reserve Building, Los Angeles, commissioned to prepare plans for a building to be erected at Norwalk State Hospital; cost, $75,000.

Bennett & Haskell, 311 First Trust Building, Pasadena, commissioned to prepare plans for an armory to be erected in Pasadena; cost $50,000.

SPOKANE ARCHITECTS DINE

A dinner and evening meeting of Spokane architects was held recently in the Gothic room of the Davenport Hotel. Another meeting is scheduled for this month with faculty members from Washington State College as guests. Extension work in the Architectural and Engineering departments of the college will be discussed.

SOCIETY and CLUB MEETINGS

NORTHERN CALIFORNIA CHAPTER

The regular monthly meeting of the Northern California Chapter, the American Institute of Architects, was held at the Clift Hotel, San Francisco, on the evening of February 24th.

In the absence of President Gutterson and Vice-President Evers, Frederick H. Meyer, past President and Regional Director of the Institute, presided.

A communication from the Washington State Chapter was read, expressing its attitude in the matter of the employment of architects for government buildings, and stressing immediate action for the establishing of the treasury department policy, to employ architects in private practice on all government buildings.

Following discussion, it was moved by Mr. Bangs, seconded and unanimously carried, that the Northern California Chapter is of similar opinion and that the executive committee shall forward an expression of this attitude to the directors of the Institute.

A motion was presented by Mr. Allen, seconded and unanimously carried, that it is the sense of the Chapter as expressed by this meeting, that the name of John Henry Nash be proposed for the award of the Institute medal for craftsmanship.

A motion was presented by Mr. Allen, seconded and unanimously carried, that the executive committee be empowered to select delegates to the sixty-fourth annual A. I. A. convention, from response cards sent out, with the entire membership as alternates.

The general topic for the evening was "New Materials and Methods in Design" with a program as arranged by Lester Hurd.

Opening the program, Mr. Meyer drew a picture of the building of the future and the possible and probable development of the application of metals to accomplish it. Included in his remarks was a forecast of the future effort in design to withstand earthquakes and other unknown forces.

B. M. Shimkin, consulting engineer, spoke on "New Methods in Building Construction" and outlined the history of arc welding and its application in building.

William I. Garren explained the history and use of various metals commonly used for architectural decoration and spoke of the development of new metals and finishes, and of their importance as an element of modern design.

Through the courtesy of Michel and Pfeffer Company, many of these metals were exhibited at the meeting, and their representatives, Messrs. Tellefsen and Wintro, ably answered the many questions which were asked pertaining to these materials.—J. H. M.

SOUTHERN CALIFORNIA CHAPTER

The regular monthly meeting of Southern California Chapter, A. I. A., was held February 17th at the University Club. Standing committee appointments for the year 1931 were announced by President H. C. Chambers. The committees are:

Institute and Chapter Affairs: H. Roy Kelley, chairman; David J. Witmer, vice-chairman; Paul J. Duncan, Reginald D. Johnson and S. B. Marston.

Public Service: Carleton M. Winslow, chairman; H. F. Withey, vice-chairman; J. J. Backus, Kenneth Gordon, Harold Hopkins and Scott Gerity.

Sub-committees dealing with public service are:

Legislation: Samuel E. Lunden, chairman; H. C. Nickerson and W. F. Staunton, Jr.

Building Ordinances: Claud Beelman, chairman; Alfred F. Priest, Harold G. Spielman and Loyal F. Watson.

Structural Service: H. F. Withey, chairman; A. L. Acker, E. J. Borgmeyer, Edwin D. Martin and C. K. Smithley.

Ethics and Practice: Gordon B. Kaufman, chairman, five years; J. E. Allison, vice-chairman, three years; John Parkinson, one year; Robert H. Orr, two years, and Pierpont Davis, four years.

Affiliated Societies and Allied Clubs: Eugene Weston, Jr., chairman; Charles A. Plummer, vice-chairman; George J. Adams, Leland F. Fuller, Jonathan Ring and Lloyd Rally.

Membership: Palmer Sabin, chairman; R. Germain Hubby, vice-chairman; A. M. Edelman, Donald D. McMurray, Donald B. Parkinson, R. C. Flewelling and William Richards.

Education: W. L. Risley, chairman; Sumner M. Spaulding, vice-chairman; Carleton M. Winslow, C. E. Johnson, A. S. Nibecker, Jr., and C. S. Van Pelt, Jr.

Subcommittees dealing with education are:

Schools and Scholarships: Sumner M. Spaulding, chairman; Edgar H. Cline, Arthur R. Hutchason, Fitch H. Haskell and Edgar W. Maybury.

Exhibitions: Palmer Sabin, chairman; Eugene Weston, Jr., Edwin D. Martin, W. L. Risley, Douglas H. McLellan and Roland E. Coate.

Public Information: J. E. Allison, chairman; H. Roy Kelley, William M. Clarke, R. C. Flewelling, Donald R. Wilkinson and A. C. Zimmerman.

Finance: Edwin Bergstrom, chairman, five years; Walter Webber, one year; Alfred W. Rea, two years; David C. Allison, three years; and Sumner P. Hunt, four years.

Permanent Records: Edwin Bergstrom, H. C. Chambers and A. S. Nibecker, Jr.

Special committees to serve for the year are:

Octagon Building Committee: William Richards, chairman; Carleton M. Winslow, Reginald D. Johnson and Robert D. Farquhar.

Honor Awards: Palmer Sabin, chairman; Roland E. Coate, W. L. Risley, Sumner M. Spaulding and Eugene Watson, Jr.

Standard Code: William Richards, chairman; J. E. Allison, F. M. Ashley, J. J. Backus, M. L. Barker, Claud Beelman, Edgar H. Cline, R. C. Flewelling, Roy C. Mitchell, Herbert J. Moore and Harry L. Pierce.

William Lee Woollett gave an interesting talk on "Refinement in Architecture," illustrated with lantern slides of European architecture. The pictures are a part of the collection of the late Prof. Goodyear of the Brooklyn Museum of Arts and Sciences.

OREGON CHAPTER, A. I. A.

Luncheon was held at the University Club, Portland, Oregon, February 17th. Those present were: Messrs Doty, Parker, Aandahl, Holford, Allyn, Roehr, Jacobberger, Linde, Jones, Knighton, Tucker, Stanton, Crowell, Church, Lawrence.

Messrs. Hogue and Van Snyder, representing the West Coast Lumbermen's Association, made short talks telling of the Association's success in establishing grading rules and guarantees for millwork. They exhibited a special folding casement window of wood designed for office buildings.

Mr. Holford explained the proposed competition to be held by the Chapter to select a designer for a new certificate for the use of the State Board of Architects Examiners.

On motion of Mr. Holford it was voted to hold the March meeting on the evening of the 12th to meet the schedule of Dean Hunt Bosworth of Cornell and Roy Child Jones of Minnesota, Survey Committee of Association of Intercollegiate Schools of Architecture, and the entertainment committee was requested to extend an invitation to these gentlemen to be present; Mr. Borhek of Washington State Chapter to be invited to the same meeting.

President Doty mentioned the possibility of Frank Lloyd Wright being in Portland in March, his exhibition in Eugene being scheduled from the 7th to the 10th. The secretary was requested to write to Mr. Wright and invite him to attend the March 12th meeting.

By request the secretary read the resolutions sent to the legislature on February 10th.

A questionaire from Secretary Baldwin regarding architectural service on public buildings was read in part by President Doty. On motion by Lawrence it was voted the executive committee should formulate an answer to Secretary Baldwin. Members of the Chapter are hereby urged to send their replies to the questionaire to the Chapter secretary, as requested in Baldwin's letter.

Chairman Jacobberger of the auditing committee reported last year's funds accounted for and recommended that the executive committee secure an accountant to set up a more up to date system of accounting.

On motion of Mr. Lawrence the State Building Code Committee report was removed from the table and Mr. Linde requested to report on the special code meeting of the Oregon Building Congress. Linde reported that it had been a great pleasure for him to attend this meeting but his objections to the proposed code were the same as in the original report. He declared himself in favor of a code equitable to all concerned.

It was moved by Mr. Lawrence and passed that the report on the proposed State Building Code be referred to the committee on legislation with power to act.

Mr. Church called the Chapter's attention to an article in the Octagon relative to architects and income tax.

Followed a spirited discussion of the Architects Registration Law by Messrs. Linde and Lawrence. The question before the meeting was not stated.

—W. H.C.

WASHINGTON STATE CHAPTER

A plan to place the designing of federal public buildings in the hands of private architects was discussed with some animation at the February meeting of the Washington State Chapter, American Institute of Architects. The Chapter announced an exhibition of the work of Frank Lloyd Wright, noted American architect of Chicago, to be held about March 14 in Seattle. The sponsors will include the A. I. A., the Department of Architecture at the University of Washington and the Seattle Fine Arts Institute.

"Economic Conditions in Russia" was the subject of an interesting address by J. F. Habegger of Seattle, who served with the American Relief Corps in Europe following the World War.

Initiative taken by the Washington Chapter, led by President Roland E. Borhek of Tacoma, in requesting President Albert Kohn of the national organization to launch a campaign to get the government out of the architectural business, has not yet brought satisfactory results. The Washington Chapter feels that the time to bring pressure is while Congress is in session. Two emergencies exist at present, namely: (1) Speeding up the design of public buildings; and (2) providing employment for architects.

The Washington Chapter believes that all governmental buildings could be designed more efficiently by private practitioners, who have better knowledge of local conditions. It would limit the work of the Supervising Architect to choosing the local architect and supervising the work. Under such a program, the Chapter is certain that buildings would be better adapted to their environment, and would be erected more expeditiously.

Secretary Lance E. Gowen of Seattle was instructed to obtain the reactions of other Chapters to the movement.

ALBANY SCHOOLS

Paul L. Dragon, associated with William H. Weeks, architect, Underwood Building, San Francisco, has been commissioned to prepare plans under a recent bond issue, for additions to school buildings in Albany, Alameda County, to cost $130,000.

NOTABLE LUNCHEON

Professors F. Bosworth of Cornell University and Roy Charles Jones, University of Minnesota, president and secretary respectively of the American Association of Collegiate Schools of Architecture, were entertained at luncheon February 13, at the College Club, Seattle, by the Washington State Chapter.

STATE ASSOCIATION

Pending legislation was discussed at a joint meeting of the executive boards of the Northern and Southern Districts, State Association of California Architects, held at the Jonathan Club, Los Angeles, Saturday, February 21. Robert H. Orr of Los Angeles, president of the State Association, presided. Northern architects present were: Charles F. B. Roeth, first vice-president; Albert J. Evers, second vice-president; Chester H. Miller, secretary; William I. Garren, treasurer; Harris C. Allen, John J. Donovan, Henry C. Collins and Mark Jorgenson, directors. Officers of the southern group are: Robert H. Orr, president; G. Stanley Wilson, vice-president; Lester G. Scherer, secretary; A. M. Edelman, treasurer; Harold E. Burket, R. C. Farrell, Louis J. Gill and Alfred F. Priest, directors.

TWO ARCHITECTS HONORED

Dr. Paul Philippe Cret, internationally-known architect, was named as winner of the $10,000 Philadelphia award, founded by Edward W. Bok in 1921. Dr. Cret, designer of the Delaware River bridge and of Philadelphia's parkway, was chosen as the "hidden force behind Philadelphia's architectural and artistic advances" in the last 25 years, according to Roland S. Morris, former ambassador to Japan, who made the presentation. Dr. Cret is the tenth recipient of the honor.

Reginald D. Johnson of Los Angeles, who has designed many buildings in Southern California, was awarded the gold medal in the 1930 small-nouse architectural competition conducted by Better Homes in America, an organization with headquarters at Washington, D. C.

WASHINGTON ARCHITECTS SOCIETY

A resolution urging the Washington State Legislature to appropriate $100,000 for survey of the proposed low level Cascade Tunnel was passed by the Washington State Society of Architects at its regular meeting February 12 at the Gowman Hotel, Seattle. President John S. Judson presided.

BERKELEY RESIDENCE

Plans have been completed by Messrs. Hardman and Russ, architects of Berkeley, for a Spanish dwelling in Arlington Heights for Mrs. Martha Mulks.

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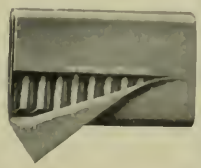

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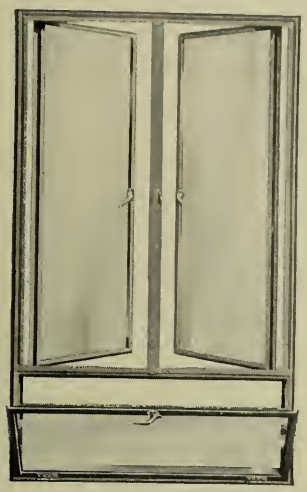

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WHY new concrete floors need SISALKRAFT protection

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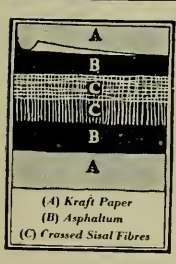

(A) Kraft Paper
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The monolithic concrete floor under this Sisalkraft is clean and hard. All the dirt is removed when the paper is rolled up.

Sisalkraft is composed of crossed layers of sisal fibres, imbedded in asphaltum, and covered by layers of heavy kraft paper. Made in rolls 3, 4, 5, 6 and 7 feet wide.

EVERY new concrete floor needs protection against dripping cement which must be ground off later—against dust and dirt that mean dusty surfaces for a long time—against oil or grease stains that have to be scrubbed off—against the sun and wind that evaporate the moisture too rapidly for adequate curing. The ideal protection includes all these things without interfering with the use of the floor by other trades.

Such protection can be furnished by Sisalkraft, the airtight, waterproof building paper. Only Sisalkraft has the strength and toughness essential for adequate and *economical* protection. Non-elastic sisal fibre reenforcement imbedded in waterproofing asphalt between sheets of heavy kraft paper provides a membrane that is able to stand an amazing amount of hard usage. It protects thoroughly and without any further attention after it is laid. When the job is finished, the paper is rolled up, taking with it all the dirt and grease and leaving only the clean, hard, dense concrete surface.

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And on ordinary construction it is also a fact that all non-resilient papers split—tear and drag from the nails when subject to building strains, shrinkage and settling, whereas Brownskin meets these distortions without breaking. It's safest to specify and insist on Brownskin, the Resilient Building Paper.

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Owner, R. T. Creswell. Architect, H. G. McMastern

REPAIR TERMITE DAMAGE

Another publication on termites has been issued by the Experiment Station of the College of Agriculture, University of California. It is known as Circular No. 318, and is entitled "Termites and Termite Damage." The result of two years' intensive research on termites and investigations as to the best methods of repairing structures damaged by termites and of preventing their attacks by proper building methods, it gives the most complete and authoritative information on these subjects published to date.

In addition to laboratory field research the practical experience of architects, building inspectors, and others concerned with housing problems was used to make the publication as up-to-date as possible. It abounds in illustrations which makes information readily available to all.

The circular is divided into three parts: (1) biological information, (2) the use of chemicals and termite-proof construction and repair work, and (3) construction methods. The section on the use of chemicals gives directions for the use of various solutions recommended for the prevention and control of termite damage under various conditions. The section on construction methods includes seventeen construction diagrams illustrating the points in structures most subject to attack, the methods of construction considered most effective in preventing termite attack, and directions for effective repair of damage in existing structures.

The circular contains sixty-four pages of authentic information on this pest and how to combat it if present. It is not a final report of the Termite Investigations Committee, but it is an informative booklet which will undoubtedly serve an urgent need. Copies of the circular may be obtained from the College of Agriculture of the University of California at Berkeley. Additional information on termite damage needed by architects may be obtained from the Termite Investigations Committee, 215 Market Street, San Francisco.

THE MODERN IN HARDWARE

For at least twenty-five years there has been a greater or less pressure brought to bear upon the manufacturers of Corbin hardware to create a line that would reproduce in spirit, if not in exact form, the simpler types in vogue in the seventeenth and eighteenth centuries. Architects have, at times, ordered special hardware of this kind for residences, and there has been a constant show of interest. But it has never seemed wise to attempt the creation and sale of such a line, owing to the very widely diversified ideas of architects and owners and the comparatively small demand.

Now, however, the very marked change in the architectural style of modern fine dwellings has created a market for hardware of suitable pattern. To meet present day tastes it must be sturdy, with little

ornamentation—and that of a simple pattern—and must simulate the hand forged hardware of two and three centuries ago. Approved specimens were found in old hardware which had survived the passage of time. Taking into account the designs known to be authentic, adding to them such pieces as modern building requirements made necessary, a line has been created which perpetuates all the artistic beauty of the former day and is perfectly adapted to the modern building. The line is complete in assortment and covers a wide variety of forms as developed in the various countries.

In this assortment Corbin offers the architect a number of advantages.

First. A line which is custom made in appearance at the lower cost of quantity production.

Second. An individuality in every piece made. No two are alike in finish or appearance though all the articles in any design are harmonious in effect.

Third. Locks and handles produced by the same force, and guaranteed to operate together. Anyone who has tried to operate locks of one manufacture with handles made by some one else will appreciate the significance of this one fact.

Fourth. Permanency of finish. The Colonial metal used in the EH lines does not change with the passage of time except with a ripened richer patina.

Fifth. Contracts for locks and hardware equipment filled complete, just as in other types of trim, and all of uniform quality.

Sixth. An assortment which has appeal in range and variety, including complete equipment for inside doors, cabinets and drawers of homes. It is equally applicable to many libraries, universities, churches and other structures whose architectural motives are in harmony with the simple form of the hardware.

Undoubtedly all of this will mean much to the architect when considered in conjunction with the distinctiveness and beauty of the goods.

WINDOWLESS FACTORY

A contract has been awarded for the first large windowless factory building, a $1,500,000 plant, entirely without daylight and embodying radically advanced ideas for scientific creation of artificial lighting, ventilation and other working conditions. The structure will be built by the Austin Company, of Cleveland, for the Simonds Saw and Steel Company of Fitchburg, Massachusetts. It will occupy five acres and will be one story in height.

This unique building will have solid, sound-resisting walls. Its roof will have neither windows nor skylights. Illumination will come from hundreds of 1000-watt electric lights arranged to provide uniform light intensity which is rarely possible in daylight factories depending upon the cleanliness of windows or upon the weather.

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like this makes a house worth more

HOUSES laid with "Perfection" Brand Oak Flooring command a better price on the open market.

You can depend upon "Perfection." In modern plants operated by skilled lumbermen, only the finest oak is selected. After proper seasoning and kiln-drying, it is perfectly milled and matched so that it lays smooth and stays smooth. It is graded and handled so carefully that upon arrival anywhere, it is always is perfect condition. Leading lumber dealers gladly feature this nationally advertised brand.

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THE Bull Dog Method of anchoring wood floors over concrete reduces dead load 18,000 lbs. to 1,000 square feet of slab area—making possible tremendous savings in building costs.

Besides, Bull Dog Floor Clips ***eliminate dry rot***, doubling floor life. No fill to dry, sleepers and finished floor are laid at same time. Beveling and shimming are unnecessary. Permanent and secure anchorage prevents buckling, squeaking and doming. The Junior Clip (5/8" wide) may be used with or without a fill (dependent on the service duty of the floor.) When a fill between the sleepers is desired, any cheap, inexpensive mix such as sand, cinders or cinder concrete can be used.

Millions of BULL DOG FLOOR CLIPS on over 8,000 jobs carry testimony of satisfaction. Made for 2, 3 and 4 inch sleepers. Regular and Junior Styles. Friction tight nailing facilities (nails gratis.) Write for catalog and samples.

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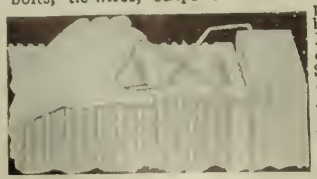
REGULAR CLIP—*3 sizes, 2, 3 and 4 in. 20 gauge galvanized iron.*

Original Patent granted June 14, 1921
Reissue Patent granted June 29, 1924
Process Patent granted May 19, 1925

JUNIOR CLIP—*3 sizes, 2, 3 and 4 in. 18 gauge galvanized iron.*

The Bull Dog Buck Anchor

THE Bull Dog Buck Anchor forms a rigid truss in the mortar joint which prevents the movement of the buck in any direction. It eliminates the use of nails, screws, bolts, tie-wires, strips of metal lath and iron, and all pounding against the back sides of the buck. Made in three widths of No. 10 Galvanized Steel Wire: 3 in., 4 in., 6 in. Ten per cent of anchors in packing cases are shorts to take care of spaces too short for the regular size anchor.



CO-OPERATION IN BUILDING INDUSTRY

By HARLAN THOMAS, A. I. A.

I DO NOT LIKE the term "contractor" and care less for the word "contract." It has a metallic click to it, like the snap of a pair of handcuffs—like the clink of a ball and chain.

I believe that the Building industry is in a state of transition, that a salutary evolution is in progress, that the old fashioned "General Contractor" is gradually being supplanted with what we might call "The Construction Consultant and Builder." The elements and conditions involved in the various phases of the building industry of this generation furnish the causes for this evolution.

The architect of today has a vastly different task in designing a building than the architect of any previous generation. The old solid masonry walls and timber construction of former times have been replaced by steel and reinforced concrete, thus introducing new and complicated elements of construction which involve in their fabrication the use of many mechanical devices and equipment.

The modern building as it is designed today is replete with mechanical equipment which must be the last word in a day which is labeled the "age of science and machinery." Elaborate systems of plumbing, heating and ventilation, electric wiring, vertical transportation and service and refrigeration, as well as many other lesser items of mechanical contrivances, all requiring that a mass of pipes and ducts must be worked in, around, over and under all kinds of structural sections without impairing them, crowded in and snugged away with a minimum use of floor area and without requiring expensive construction. A knowledge must be had of an ever increasing variety of building materials subject to a constantly fluctuating market as well as a thousand and one building specialities to be sorted over and selected from. Also an intricate classification of labor is to be scanned, which is constantly subject to influences and conditions which make for increased efficiency or reduce it. The degree of consideration given and judgment used by the architect and his draftsmen in the preparation of the plans and specifications which incorporate and set forth the construction, mechanical equipment and finish of the enterprise will be reflected in the cost of the structure.

In the preparation of plans, the question of cost is an ever present ghost in the draughting room. In the building investment of today if the cost is out of balance with the rental value the enterprise is wrecked. After the average architect's office has cubed their building and multiplied by some fluctuating cost per cubic foot, they have just about reached their limit in ascertaining costs. The most helpful thing to an architect is to have an accurate estimate of the cost of the project in the early stages of planning.

*Abstract of an address to the General Contractors, Seattle, Washington.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond—1½% amount of contract.

Brickwork—

Common, $28 to $33 per 1000 laid, (according to class of work).
Face, $70 to $90 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $.90 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.80 sq. ft.
Common, f. o. b. cars, $9.00 plus cartage.
Face, f.o.b. cars, $40.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in.	$ 75.00 per M
4x12x12 in.	85.00 per M
6x12x12 in.	124.00 per M
8x12x12 in.	188.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5½	$87.00
6x12x5½	60.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—55c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.

Terazzo Steps—$1.50 lin. ft.

Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers	$1.40 per ton
No. 4 rock, at bunkers	1.40 per ton
Eliott pea gravel, at bnkrs.	1.40 per ton
Washed gravel, at bnkrs.	1.40 per ton
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City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.00 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.44 per bbl. In paper sks.
Cement (f.o.b. Job, S. F.) $2.64 per bbl.
Cement (f.o.b. Job, Oak.), $2.64 per per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Atlas "White" .....$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4½ inch Concrete Basement floor .....13c to 14c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps.....$1.10 per lin. ft.

Dampproofing—

Two-coat work, 18c per yard.
Membrane waterproofing—4 layers of saturated felt, $5.00 per square.
Hot coating work, $1.80 per square.

Electric Wiring — $2.75 to $8.50 per outlet for conduit work (including switches).
Knob and tube average $2.25 to $5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2400.

Excavation—

Sand, 50 cents; clay or shale, $1.00 per yard.
Teams, $10.00 per day.
Trucks, $21 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 80c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c square foot.
Note—Add extra for setting.

Heating—

Average, $1.60 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

Common, $24.00 per M (average).
Common O. P. select, average, $28.00 per M.

1 x 6 No. 3 Form lumber	$16.00 per M
1 x 4 No. 1 flooring	45.00 per M
1 x 4 No. 2 flooring	42.00 per M
1 x 4 No. 3 flooring	37.00 per M
1 x 6 No. 2 and better flooring	40.00 per M
1¼x4 and 6 No. 2 flooring	50.00 per M

Slash grain

1 x 4 No. 2 flooring	$35.00 per M
1 x 4 No. 3 flooring	31.00 per M
No. 1 common run to T. & G.	30.00 per M
Lath	4.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ .85 per bdle.
Redwood, No. 2	.65 per bdle.
Red Cedar	.85 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$130.00 M ft.
1 1-16x2¼" T & G Maple	140.00 M ft.
⅞x3½ sq. edge Maple	127.00 M ft.

	13-16x2¼" T&G	¾x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$220.00 M	$160.00 M	$178 M
Sel. Qtd. Oak	150.00 M	122.00 M	131 M
Clr. Pla. Oak	155.00 M	110.00 M	113 M
Sel. Pla. Oak	132.00 M	79.00 M	97 M
Clear Maple	147.00 M	101.00 M	
Laying & Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers, $9.00 per day.

Building Paper—

1 ply per 1000 ft. roll	$2.80
2 ply per 1000 ft. roll	4.20
3 ply per 1000 ft. roll	6.50
Sash cord com. No. 7	$1.00 per 100 ft.
Sash cord com. No. 8	1.10 per 100 ft.
Sash cord spot No. 7	1.60 per 100 ft.
Sash cord spot No. 8	1.90 per 100 ft.

Sash weights cast iron, $45.00 ton
Nails, $3.00 base.
Belgian nails, $2.75 base.

Millwork—

O. P. $80.00 per 1000. R. W., $80.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $5.00 and up. each.
Doors, including trim (single panel, 1¾ in. Ore. pine) $6.50 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 20c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $4.50 each.
Dining room cases, $6.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $11.00 per M.
For smaller work, average, $22 to $30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska	$1.40 sq. ft.
Columbia	1.40 sq. ft.
Golden Vein Yule Colo.	1.70 sq. ft.
Pink Lepanto	1.50 sq. ft.
Italian	1.75 sq. ft.

NOTE—Above quotations are for 7/8 inch wainscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique	$2.50 sq. ft.
Verde Antique	3.00 sq. ft.
Tennessee	1.50 sq. ft.
Alaska	1.35 sq. ft.
Columbia	1.45 sq. ft.
Yule Colorado	1.45 sq. ft.
Travertine	1.60 sq. ft
Tennessee	1.70 sq. ft.

Painting—

Two-coat work	30c per yard
Three-coat work	40c per yard
Cold Water Painting	8c per yard
Whitewashing	4c per yard

Turpentine, 78c per gal. in cans and 63c per gal. in drums.
Raw Linseed Oil—$.84 gal. in bbls.
Boiled Linseed Oil—$.87 gal. in bbls.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lb. and less than 1 ton lots	12c
Less than 500 lb. lots	12½

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11¾c
500 lb. and less than 1 ton lots	12c
Less than 500 lb lots	12½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	13¼c
500 lb. and less than 1 ton lots	13½c
Less than 500 lb. lots	14c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.85 lineal foot
12-inch	2.10 lineal foot

Pipe Casings — 12″ long (average), $7.50 each. Each additional inch 10c.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.38
2 coats, lime mortar hard finish, wood lath	.50
2 coats, hard wall plaster, wood lath	.52
3 coats, metal lath and plaster	.95
Keene cement on metal lath	1.20
Ceilings with ¾ hot roll channels metal lath	.66
Ceilings with ¾ hot roll channels metal lath plastered	1.35
Shingle partition ¾ channel lath 1 side	.60
Single partition ¾ channel lath 2 sides 2 inches thick	2.05
4-inch double partition ¾ channel lath 2 sides	1.25
4-inch double partition ¾ channel lath 2 sides plastered	2.30

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$ .90
2 coats Atlas cement, brick or concrete wall	1.15
3 coats cement finish No. 18 gauge wire mesh	1.60
3 coats Atlas finish No. 18 gauge wire mesh	2.90
Wood lath, $4.00 per 1000.	
2.5-lb metal lath (dipped)	.18
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.23
3.4-lb. metal lath (galvanized)	.27

¾-inch hot roll channels, $45 per ton.
Hardwall plaster, $15.40 ton; $12.95 in paper sacks (rebate 15c sack).
Finish plaster, $16.40 ton; in paper sacks, Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $43.00 per M.
Hydrate Lime, $19.50 ton.

Composition Stucco—$1.50 to $1.80 per sq. yard (applied).

Plumbing—
From $60.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $5.00 per square for 30 squares or over.
Less than 30 squares, $5.25 per sq.
Tile, $19.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10.50 sq. in place.
Recoat, with Gravel, $3.00 per sq.

Sheet Metal—
Windows—Metal, $1.80 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, $1.00 sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Stone—
Granite, average, $5.50 sq. foot in place.
Sandstone, average Blue, $3.50; Boise, $2.60 sq. ft. in place.
Indiana Limestone, $2.60 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 70c per lineal foot.
Note—Consult with agents.

Steel Structural—$90 per ton (erected). This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $86.00 to $90.00 per ton.

1931 WAGE SCHEDULE FOR SAN FRANCISCO BUILDING TRADES

Fixed by the Impartial Wage Board

Craft	Journeymen Mechanics
Asbestos workers	$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00
Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housesmiths, arch. iron, skilled all branches	9.00
Housesmiths, arch. iron, not skilled all branches	8.00
Housesmiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scraper teamsters, 2 horses	6.00
Scraper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Friday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturdays, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

Wanting this, he is very likely to exceed the appropriation. The resultant necessary for a revision of the plans after completion (with a dissatisfied owner in the background) is the rock which has wrecked many an enterprise and many an architect.

What we need today and what we are gradually getting is a "Construction Consultant and Builder" who will stand side by side with us from the first survey of the site to the day when the keys for the completed building are turned over to the owner. We want the builder to be at home in our draughting room from the start, in constant consultation with our draughtsmen, discussing with them all details of construction, finish and equipment from the constructors point of view as one making for economy and efficiency.

There is much money wasted in building construction for want of collaboration between the architect's draftsmen and the one who is to have in charge construction of the building. Your continuous experience and daily contact with the myriad problems of construction, which you are seeking to solve in the interest of economy and efficiency in the buildings under your charge, your intimate knowledge of the building materials in the market and their relative prices and adaptability for various purposes, your practical knowledge of building specialties, their uses and manner of application or installation and which you have doubtless used in many buildings, gleaned from actual experience, makes you a most valuable consultant from the beginning to the completion of a set of plans, specifications and details.

JOHNSON OIL GOES MODERN

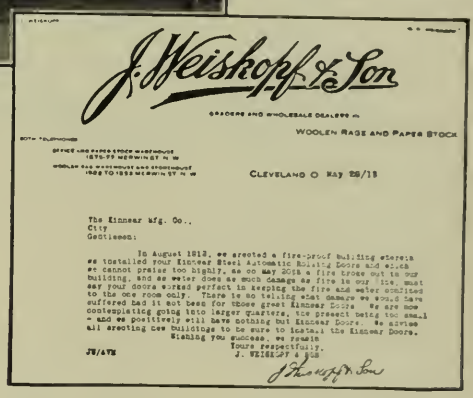
With everybody talking modern these days it is not strange manufacturers of building materials and equipment should fall in line with their advertising matter. S. T. Johnson Company have just published a 20-page circular about oilburners. It's called "Modern." It goes on to tell of modern oil burners which the company is manufacturing and which produce uniform heat at a considerable labor-saving. The index tells you that within the brochure you can obtain all the information you wish about "Johnson Automatic Fuel Oil Burners," "Johnson Type 'B' Automatic Oil Burner," "Johnson Type '30-A' Automatic Oil Burner," "Johnson Type '30-H' Automatic Oil Burner," "Selecting the Correct Equipment," and "What Others Say."

Other recent publications by the Johnson Company are Bulletin 12-B, "Johnson Low Pressure Air Atomizing Oil Burners"; Bulletin 28-G, Johnson Rotary Fuel Oil Burners," and a second edition of "A New Freedom in Home Heating." Any of these books will be mailed for the asking.

undamaged

—yet they stopped two serious fires!

Unretouched photographs, taken April 8th, 1930, of the Kinnear Automatic Rolling Doors installed in the Weiskopf Building in 1912, as they appear after eighteen years of continuous service and fire protection duty.



J. Weiskopf & Son

GRADERS AND WHOLESALE DEALERS IN

WOOLEN RAGE AND PAPER STOCK

CLEVELAND O MAY 28/13

The Kinnear Mfg. Co.,
City
Gentlemen:

In August 1912, we erected a fire-proof building wherein we installed your Kinnear Steel Automatic Rolling Doors and which we cannot praise too highly, as on May 20th a fire broke out in our building, and as water does as much damage as fire in our line, must say your doors worked perfect in keeping the fire and water confined to the one room only. There is no telling what damage we would have suffered had it not been for those great Kinnear Doors. We are now contemplating going into larger quarters, the present being too small - and we positively will have nothing but Kinnear Doors. We advise all erecting new buildings to be sure to install the Kinnear Doors.

Wishing you success, we remain
Yours respectfully,
J. WEISKOPF & SON

J. Weiskopf & Son

EIGHTEEN years of continuous service duty—two fires confined a single room—and still in good operating condition—on service duty every day. That's the record of the Kinnear Automatic Rolling Doors installed in the Weiskopf Building in 1912. It takes doors of sturdy stuff to stand such punishment—but that's the way all Kinnears are made. Designed for fire or service duty only, or a combination of both—manual or motor operated. Literature or estimates without charge or obligation.

kinnear
ROLLING DOORS

THE KINNEAR MANUFACTURING CO.
661-667 Field Avenue, Columbus, Ohio, U. S. A.

Boston Chicago Cincinnati Cleveland Detroit New Orleans
New York Philadelphia Pittsburgh Kansas City San Francisco

AND NOW!

DUTCH BOY WHITE LEAD

for STUCCO *and* CONCRETE

HOTEL WHITECOTTON, *Berkeley, California*

WILLIAM MCPHERSON, *Painting Contractor*

The painting of stucco and concrete buildings for protection as well as beautification has long been a problem of property owners and architects.

This problem has now been solved for them through the combining of White Lead and Lead Mixing Oil, which produces a beautiful, durable and waterproof coating.

The Hotel Whitecotton in Berkeley is but one of the many important buildings which have recently been painted with Dutch Boy White Lead and Lead Mixing Oil, products of the National Lead Company of California.

Northern Division Seattle · *Central Division* San Francisco · *Southern Division* Los Angeles

NATIONAL LEAD COMPANY *of California*

Makers of Dutch Boy and Carter White Lead also Bass-Hueter Paints and Varnishes

DUNHAM CONCEALED RADIATION

The C. A. Dunham Company of Chicago announces the recent development of a concealed radiator of improved design, that has many features of interest to architects. The new radiator is of radically different construction, and was first built only after exhaustive research to determine just what qualities are most desired. It is especially adapted for use with the Dunham Differential Vacuum Heating System. However, the solid construction and permanence make this concealed radiator excellently suited for use with any heating installation.

The internal construction of this radiator is extremely rugged. Seamless drawn copper tubes are used, connected to the headers by screwed ground joints, a standard method for securing a tight reliable joint, but never before used in concealed radiation. The connection is permanently steam tight, eliminates gaskets or soldering, and makes each tube an independent, easily removed unit. The radiating fin is a smooth continuous spiral, with no dust catching hollows, and is metallically attached to the tube. The positive metallic union between tube and fin assures a constant heating efficiency that will not drop off after a short time in service.

The radiator is so designed that it may be removed from the recess, if necessary, by merely disconnecting the steam pipe. This eliminates the former objection to concealed radiation, from a maintenance standpoint. The casing telescopes, providing a welcome adjustable feature that saves a great deal of installation difficulty.

HONORS FOR CARL F. GOULD

Carl F. Gould, architect of Seattle, recently visited New York and Washington, D. C. While in Washington he was asked to serve on the design committee of the President's conference committee on home owning and ownership. In New York he was notified of his election to the executive committee in America of the Fontainbleau School of Art in France in recognition of his efforts in establishing a Fontainbleau scholarship at the University of Washington.

OF REAL VALUE

From Robert Stacy-Judd, Architect, Los Angeles.

"Your magazine, in my opinion, is one of the most practical, best illustrated and of more real value to an architect than any I am acquainted with. Large pictures, short articles and 'potted' general information place it among the few leading journals. Have faith in your fine work and only good will come to you."

"SALEM SHINGLES"

"Salem Roofs" is the title of a new Johns-Manville Architectural Service brochure. The cover shows a New England cottage roofed with Salem shingles, and in the application of these shingles the company offers expert collaboration with the architect.

LANDSCAPE ARCHITECTS INTERESTED

Requests for detailed information on the Armco "Metalcurb," a product designed for metal edging in the re-surfacing of highways, come from a number of architects who learned of it at the Road Show in St. Louis, recently.

It seems that this new use of a metal edging appeals to landscape architects who are interested in drives and walks.

Among the principal advantages of "Metalcurb" are: "Because of the simplicity of design and the fundamental engineering principles involved, this curb can be installed with a minimum of time and labor. It requires practically no special equipment.

"The metal curb can be set in place rapidly along the road edges and the new wearing surface applied immediately. Traffic can be allowed right up to the base of operations and can usually pass, as one shoulder can be kept clear.

"Because of its adaptability, this design can be used on new construction of both primary and secondary roads. It is especially well adapted for the repair or resurfacing of all types of highways. The principles of construction involved insure a strong, durable curb.

"Fabricated from Armco Ingot iron this curb assures you the lowest cost per service year of any low cost rust-resisting metal."

CHIMNEYS AND FIREPLACES

An improperly constructed chimney or fireplace is not only inefficient in heating the house, but may also constitute a serious fire hazard, according to Farmers' Bulletin 1649-F, "Construction of Chimneys and Fireplaces," just issued by the U. S. Department of Agriculture. The Bulletin tells how to build chimneys so as to avoid objectionable features of construction. The most common faults of chimney construction, according to the Bulletin, are: Improper bricklaying, failure properly to support the chimney, lack of tight flue, and failure to maintain the full sectional bend when a flue is offset. The Bulletin contains information regarding the shapes and sizes of flues, height of chimney, flue linings, smoke test for leakage, and other essential features.

One section of the Bulletin is devoted to the construction of fireplaces. This points out that a fireplace as ordinarily constructed is not efficient and economical, but it has its place as an auxiliary to the heating plant and because of the hominess that a burning fire imparts to a room. Certain principles, which must be observed in the construction of a fireplace, if it is to have a good draft and not smoke, are explained in detail.

This Bulletin may be obtained, while the supply lasts, upon application to the Office of Information, U. S. Department of Agriculture, Washington, D. C.

Entrance Vestibule, Shell Oil Building, San Francisco
Walls of French Botreville Marble
GEO. W. KELHAM, *Architect*
P. J. WALKER COMPANY, *Builders*

▼ ▼ ▼

All Interior Marble
In the Shell Building
Furnished and Installed by the

American Marble Company

Also all Marble Work in the Christian Science Sanatorium, San Francisco.
HENRY H. GUTTERSON, *Architect.*

▼ ▼ ▼

American Marble Company

1504 Hobart Building
San Francisco, California
Telephone MArket 5070

OPERATION OF THE CONTRACTORS' REGISTRATION LAW IN CALIFORNIA

By JAMES F. COLLINS*

IT HAS been requested by the members of your program committee that I discuss herein the general subject of the licensing of contractors, with particular emphasis on the experience in California, during the period since the Contractors' Registration law became effective in this state.

It was my privilege to appear before you in New Orleans a year ago and briefly outline at that time the procedure in the office of the Registrar of Contractors of California that had then been very recently inaugurated and to express something of our hopes for both a successful and a safe administration of the new law. We now have one more year of experience behind us. During this year we have, to some considerable extent, perfected the office procedure and forms necessary in the administration of any such law. There is much to be done in the way of education of the contractors individually and the general public to the broad understanding of the obligations and responsibilities of all parties represented under this law that is designed to regulate the acts of the contractors in the great construction industry in California.

Before there can be any true understanding of the individual responsibilities under a regular law, I believe that it is first necessary for all parties interested in the law to realize something of the theory of such a measure.

Principle of Regulation

It would seem in a country such as ours, where the first fundamental principle is that of the rights of the individual in the pursuit of life, liberty and happiness, that the regulation of any individual doing business is striking at the fundamental principle of which we have always been so jealous. However, when we scrutinize closely the real basis of this fundamental principle of our country we find that the pursuit of the privileges granted therein must necessarily place upon each of us the responsibility to grant to each of our fellow citizens an equal right, and in order that he may enjoy this equal right with us it is evident that we must, by a determination and an expression of our wishes, either in acts or words, see that we do not infringe upon the rights granted to all under the fundamental principle.

In order that we may live under this circumscribed condition we must have regulations and rules upon which to base our action so that we may experience and enjoy the privileges that have been granted us and still not infringe upon the rights of our neighbors. I believe that the Contractors' Registration Act of

*Long Beach, former director of California State Department of Professional and Vocational Standards, and Registrar of Contractors. Address on "Licensing of Contractors", 12th annual convention Associated General Contractors of America, San Francisco.

California is designed to carry out this theory insofar as regulation of the contractors within the construction industry may be concerned. It is necessary, therefore, that before a regulatory law in the United States can hope for a reasonable measure of success that all those who fall within its immediate supervision must be fully informed as to their responsibilities and their obligations under the act and as citizens of their community.

"Crookedness" Negligible

Educational effort tending to this first condition has been given intensive attention through the registrar's office and through the Department of Professional and Vocational Standards of California, from which I have just retired as director and registrar of contractors.

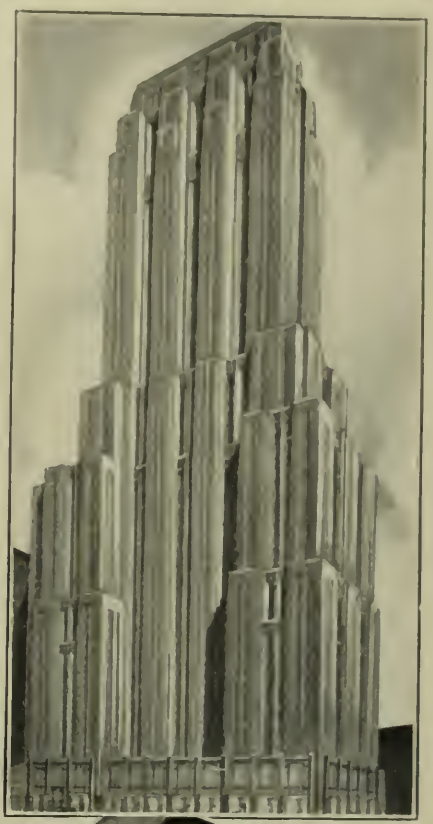
We have found in the process of administering the law that an almost negligible number of complaints brought before the registrar's office could be considered as wilful efforts to commit acts that may be classified under the general category of "crooked". It is evident that the construction industry has suffered from all the ills that come from ill-organized, unregulated activity providing a tremendous field for individual trickery. The result has been a condition of such competitive building and has developed a sentiment that has caused the people interested in the business to feel that they were dependent upon trickery and sharp practice rather than upon good business judgment, preparation and knowledge of costs and finances for their profits.

It is with a feeling of gratification that I wish here to express my great approval and endorsement of your honorable body and that of the contractors of California. This new law places a rather high degree of responsibility upon all the branches of contracting. You accepted, endorsed and supported us in our efforts in setting up the machine and interpreting this law to such an extent that, while approximately 23,000 contractors have been registered and licensed, there is not at this time a known condition of opposition any place in California; not more than a dozen letters have been received through the registrar's office indicting us for not doing things or rendering decisions that seemed to be the personal desire of those interested in special complaints.

Most Complaints Adjusted

Some idea of the immense importance of this act may be obtained when we show that the Los Angeles branch office of the registrar's office showed a record of slightly less than 30,000 contacts through calls at this office during the fifteen months' period. More than 70 per cent of all formal complaints filed resulted in satisfactory settlement without the use of the police power or authority with which the registrar is invested under the act. We estimate that for every formal complaint filed at least three potential complaints are considered and are adjusted through arbitration resulting from the discussion of the problem with some rep-

HAZARD BUILDING WIRES HAVE TEN SCHOOLGIRL COMPLEXIONS



The new Palmolive Building in Chicago. A monument to every contractor who helped to build it. It was wired with Hazard 30% Building Wire by Hatfield Electric Company; Holabird and Root, Architects; Lundoff Bicknell Company, General Contractors.

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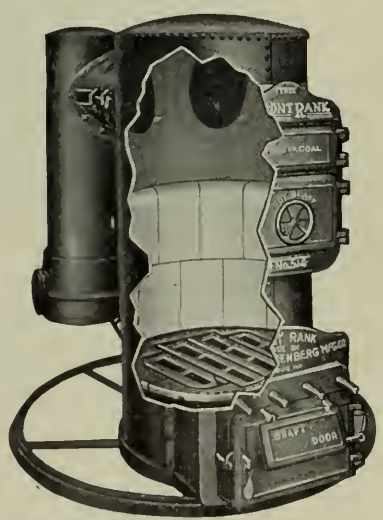

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resentative of the office. The consistent and helpful interest of all the groups affected by the Contractors' Registration Act has made possible the administration of the law, at least this far, and with what measure of success that may be credited to the office of the registrar within the limits of money available from the $5 annual fee charged for each license.

We have taken very few cases into court. Following the program outlined in my opening remarks we deemed the cheapest method of administering this regulatory law was through an educational program, with the firm belief in the honesty and integrity of the contractor, when he is given a broad understanding as to his responsibilities and obligations under the law and is brought to realize that he will be given a fair and impartial hearing before judgment is rendered.

Requirements of Law

It would probably be of interest to those interested in the business and others interested in the administration of this law to know briefly what the requirements and operations are under the law and something as to the machinery that has been employed in its administration during the period of August 14, 1929, when the law went into effect, and January 7, 1931, when the speaker retired from the office.

The law provides that every individual, firm or association engaging in the business of contracting or acting in the capacity of a contractor must be registered and have a license. It provides that all acts performed for compensation by fixed sum, percentage or fee, dealing with property other than personal, are considered as acts of contracting. This is modified to define casual or inconsequential work as amounting to the sum of $200 for one job. Recommendation has been made to the legislature at present in session that this sum be reduced to $50 or less, if possible, so that the small contractors, such as plasterers, plumbers, electrologists, etc., may be protected against the job running at less than $200. It appears that in numbers the contractors affected by this section of the law are greatly in the majority.

Certified complaints may be filed by any individual, firm or association for causes coming under any of the four following paragraphs:

(1) Illegal abandonment of contract.

(2) Diversion of funds or property which has been received for specific purpose.

(3) Fraudulent departure from or disregard of plans or specifications.

(4) Wilful and deliberate disregard and violation of the building code of the state, or of any political subdivision thereof, or of the safety laws or labor laws of the state.

Duties of Registrar

The registrar is charged with the duty to investigate complaints and render decisions thereupon. His deci-

sions may be appealed for rehearing before the registrar, and his findings become final unless appealed to the Superior Court. The registrar may suspend a license and return it at his discretion. However, if he cancels a license it can only be reissued after one year, except by the order of the Superior Court.

Further provision of the act sets forth that anyone operating without a license, in violation of the act, shall be punished by a fine of $500, or imprisonment in the county jail for six months or both.

In setting up the machinery over the state by assembling personnel and equipment to administer the act within the limits of the funds provided by the small fee, it was immediately apparent that should any considerable number of complaints be filed, requiring individual field investigations, that the cost would far exceed the income. In order to forestall this condition, we established the position of chief examiner and investigator, as assistant to the registrar, for the purpose of hearing both sides of the question in the procedure of the investigation of any complaint.

How the Office Functions

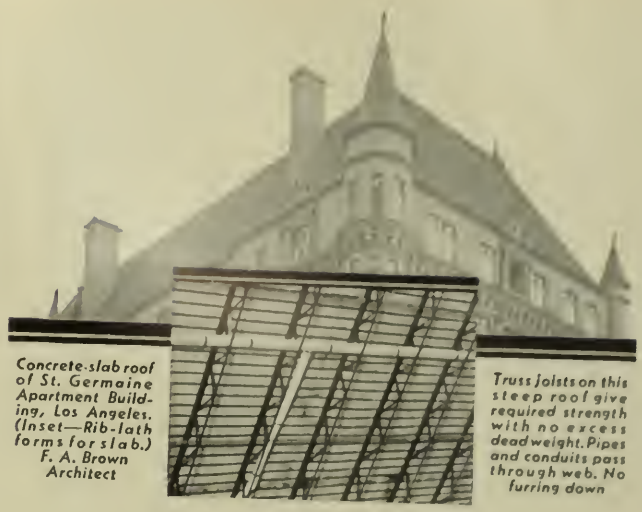
At this time the office functions in the following manner:

A complaint must be filed in three copies, properly certified. One copy is sent to each party to the complaint, with notification as to the date and hour of hearing in the registrar's office closest to the community from which the complaint came.

At the hearing the chief examiner, or his assistant, and both in some cases, conduct the conference with both parties present. Attorneys are permitted to be present and advise their clients, but are not permitted to answer for their clients, nor are the clients permitted to cross-question each other. The hearing is held principally to give the defendant an opportunity to be heard and to place of record the statements of both parties. All information and statements made setting forth the facts affecting the complaint are taken in shorthand and transcribed. The examining board may, and often does, send an investigator into the field to check upon information and statements made at the hearing. After obtaining information which is deemed necessary to make recommendation, the case is brought down in documentary form, with all transcription of depositions at hearing, and all necessary papers attached to a report and recommendation rendered by the examiner, and placed before the registrar for his decision.

Few Licenses Cancelled

It has been the policy of the registrar not to cancel licenses except in special cases. Where it is necessary to take disciplinary action, the license is suspended and the contractor and all parties concerned are notified. The defendant is given thirty days' time within


Concrete-slab roof of St. Germaine Apartment Building, Los Angeles. (Inset—Rib-lath forms for slab.) F. A. Brown Architect

Truss joists on this steep roof give required strength with no excess deadweight. Pipes and conduits pass through web. No furring down

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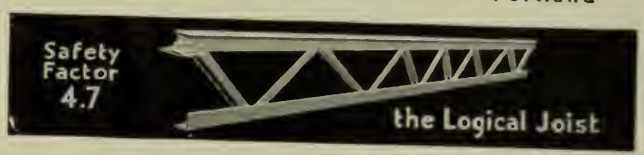

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which to make satisfactory adjustment or to show cause why his license should not be cancelled at the expiration of that period. It has been found that in the majority of cases when the parties to the complaint are brought together and sit down at the table with a neutral party, as represented by the examiner from the registrar's office, and each tells his story and finds his statements taken down as he makes them, they think more deeply on their grievance, and find they are not so far apart in their views as they at first thought. In many instances, the cases are settled by arbitration, and differences are adjusted in a few minutes at the first meeting. Other times, the adjustments and arrangements take a matter of days, sometimes weeks.

Following up the policy of education and leaning heavily upon our confidence in the integrity of the majority of the people with whom the law must deal, we have been educating those in the offices of the registrar who are likely to have direct contact, to the understanding that they must view all complaints and acts impartially, and that their personal impressions or estimates must not be permitted to be a part in the consideration of the facts of the case or evidence presented. In order that the administration of the law may be effective and the confidence of the public be held, it is essential that every safeguard be erected to prevent a feeling of partiality in any case. Of course, it is not always possible, and we have had some un-

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fortunate references made to us by letter and word of mouth, but we are glad to report that these have been insignificant in number.

Law Protects Public

The confidence of material dealers in the effectiveness of the law has increased, and to a great extent advance has been made in the attitude of the financial interests toward the contractor in the past year. It is my belief that financial interests loaning money for the building material and furnishing material going into construction, should be more interested in this law, for to a great extent they are the first beneficiaries under the act.

This law is designed so that it may be construed as constitutional under the basic law of our government. It is necessary for the protection of the general public. I believe this to be a fact. Our experience bears out this belief. The general public is dependent upon the contractor individually for the building of homes and the individuals are entitled to the protection which this law is designed to give, and which they have received and will receive to a greater extent in the future. The contractor must realize that this law is not designed principally to protect him, that it is not designed to eliminate his competitor, nor as a weapon or club. He benefits under the act through the elimination of the unfit to carry on business. In this list I place those whose lack of training, lack of personal

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aptitude for the business, and lack of either moral or financial responsibility should prevent their engaging in the contracting business. If it is possible to eliminate this class of unworthy operators, the contractor who is worthy of the confidence of the public and is willing to assume his responsibilities and obligations, will receive the benefit of the elimination of that class of competitor.

Uniform Law for All States

In conclusion, I wish to again thank all of the contractors and members of the construction industry, and particularly the officers and active members of the association of California, for their sympathetic and helpful interest and support in the trying days of organizing and placing this law in effect in California. It is needless for me to point out to you the prominent, important part that your organization here has played in the following of this law through the legislature, and in its whole-hearted support in bringing it thus far along the road.

Some recommendations have been made to amend this law. They are of a clarifying nature and are not additional restrictions placed upon the contractor. In the light of experience thus far, it is my belief that every state in the United States should have such a law on its statute book; that as far as possible they should be uniform; that the Associated General Contractors, Builders' Exchanges and the various organizations representing the industrial trades and units of business within the industry should carry forward an intensive program of education setting forth the responsibilities and obligations to the members of the industry, and it is of particular importance that at every opportunity the general public be told the story and given the same understanding.

Such a law should be jealously guarded so that it be not permitted to fall into the class of legislation for revenue. It should always be viewed as legislation for education primarily, with income and police power as secondary at all times. Here the greatest progress should be made with the minimum of unfavorable publicity.

INDOOR TENNIS COURTS

The Armstrong Cork Company's Flooring Division has solved the problem of flooring for indoor tennis courts.

When the new indoor court of the Seabright Tennis Club at Holendel, New Jersey, was constructed, Mr. Prentice, the president, selected Armstrong green cork carpet for its resiliency and firm underfooting. In addition, the balls respond in very much the same manner as they do on outdoor clay courts.

SACRAMENTO ARCHITECTS

A new architectural organization has been formed by the architects of Sacramento. They have taken the name of Society of Sacramento Architects and have an initial membership of nine out of a possible twenty-three who claim the city for their residence.

The officers are Leonard F. Starks, president; Harry J. Devine, secretary; and Chas. F. Dean, treasurer.

In discussing the aims of the society, Mr. Starks said the organization will make a strong effort to have the federal government distribute to architects the jobs of preparing plans and specifications for new federal buildings, thereby speeding construction.

The society also will favor legislation beneficial to the building trades and aid in the revision of several existing ordinances governing the erection of buildings, which were deemed inadequate to meet current needs and which, in many cases, work a hardship on the public as well as creating many unnecessary responsibilities on the part of city officials.

It will work as a sub-committee on legislation concerning highway beautification, involving landscaping, sign-board regulation and the erection of small business buildings along the sides of roads.

The society will favor standard contract documents and standard practices of payments to contractors on building projects, so sub-contractors and material dealers will be protected properly and the building industry, in general, will be placed upon a thirty-day cash basis.

The Society has adopted a standard of terms governing the payment of money on contracts executed under the direction of its members.

The following architects have agreed to use the standard in drawing up "General Conditions" in the specifications: Starks & Flanders, Harry Devine, Frederick Harrison, Jens C. Peterson and Chas. Dean.

The standard rules adopted are as follows:

"Monthly statements shall be made out in accordance with forms issued from the architect's office and said forms shall be filled out so as to show the value of work done under each branch, trade or sub-contract, and these forms will be the basis upon which the General Contractor shall pay his sub-contractors each and every month when the architect's certificate has been issued covering the amount listed on said form.

"Any sub-contractor who does not receive his payment in accordance with the amount of money collected by the General Contractor on his executed work may appeal to the Architect who will upon Owner's approval have the amount due the sub-contractor withheld from the next certificate and the General Contractor in accepting this contract hereby agrees, with out reservations of any nature, to this method of payment unless specifically agreed otherwise in the Contract Agreement Document.

"It is understood that the Contractor will make

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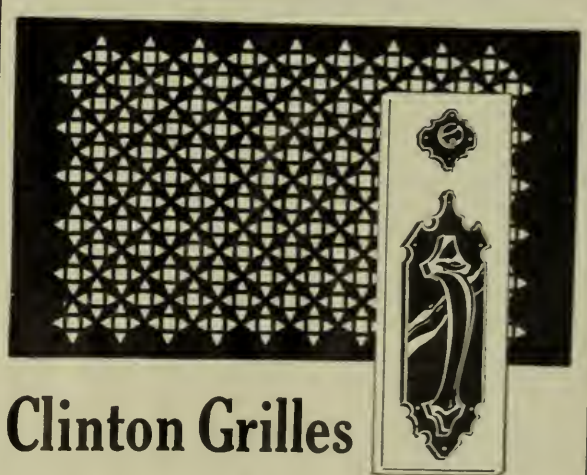

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payments to material companies and sub-contractors in accordance with the amounts shown on statement before making his request for additional payments. Failure to do so will constitute a breach of contract."

SUNNYVALE DIRIRGIBLE BASE

Actual construction on the $5,000,000 navy dirigible base at Sunnydale will be under way by July 1.

Bids for the $2,250,000 hangar to house the giant dirigible being built at Akron, Ohio, will be advertised in May, opened early in June and the contract awarded so that work can start in July.

Rear Admiral A. L. Parsons, chief of the bureau of yards and docks, stated that the instructions to Lieutenant Commander Edward L. Marshall, who has been detailed to take charge of the Sunnydale construction, include the making of test borings on the sites of the hangar and the mooring mast.

Instructions include such other large buildings and structures as are planned. It makes arrangements for a spur track into the site and building of connecting roads.

FIRM TO GO ON

Messrs. Frederick H. Reimers and William I. Garren as associated architects have taken over the office and practice of Rollin S. Tuttle, deceased, of Los Gatos. Mrs. R. H. Tuttle will continue as a member of the firm.

Messrs. Reimers & Garren have their offices jointly as architects at 233 Post Street in San Francisco and will operate Mr. Tuttle's office at 211 Bean Avenue, Los Gatos, continuing with the latter's church work which is in contemplation and for which preliminary work has been done.

Herman E. Kinney will be in charge of the Los Gatos office of the firm and Mrs. Tuttle will also be connected with the office.

The new firm will expect to continue the relations that have existed with members of the building industry on Mr. Tuttle's work. Mr. Tuttle's past work includes numerous churches up and down California, schools and residences. The new firm will continue the name of Mr. Tuttle for the present with Mr. Reimers and Mr. Garren in charge as associate architects.

ARCHITECTURAL LEAGUE OF NEW YORK

The fourth biennial Architectural and Allied Arts Exposition will commemorate the fiftieth anniversary of the founding of the Architectural League of New York, at the Grand Central Palace, New York City, April 18 to 25, 1931, inclusive. The committee is exceedingly anxious to have the profession of landscape architecture represented by an exhibition of the outstanding work accomplished by the offices throughout the United States.

A. G. C. CONVENTION

The twelfth annual convention of the Associated General Contractors of America, was held in San Francisco January 26 to 30. Northern California Chapter acted as convention hosts.

The business sessions of the convention opened at 9:15 a. m., Monday, January 26, at the St. Francis hotel with President A. E. Horst of Philadelphia presiding. These sessions continued morning and afternoon, closing Thursday.

Governor James Rolph, Jr., and Mayor Angelo J. Rossi of San Francisco both gave formal addresses. Other speakers and their subjects follow:

"Construction as a Key to Prosperity," A. E. Horst, national president, Associated General Contractors of America.

"Construction Salesmanship," W. A. Klinger, Sioux City, Iowa.

"Collective Advertising," Col. W. A. Starrett, New York.

"Construction Safety," Will J. French, director, Department of Industrial Relations, San Francisco.

"Who Said Hard Times?" Harry H. Culver, past president, National Association of Real Estate Boards, Culver City, Calif.

"What Action Should the A. G. C. Take Toward Development of New Work?" Henry J. Kaiser, Oakland, Calif.

"The Highway Program of the States and the Federal Government," Henry H. Blood, president American Association of State Highway Officials, Salt Lake City, Utah.

"Our Interest in Construction," Gov. Fred B. Balzar of Nevada.

"Business Relations of Architect and Contractor," George W. Kelham, past president, Northern California Chapter, American Institute of Architects, San Francisco.

"Railways of Tomorrow," Paul Shoup, president, Southern Pacific Co., San Francisco.

"Hoover Dam Construction," Dr. Elwood Mead, commissioner, U S. Reclamation Bureau, Washington, D. C.

Address, A. P. Greensfelder, national president-elect, St. Louis.

"The Future of Highway Construction," C. H. Purcell, state highway engineer of California.

Address by A. H. Bergstrom, architect of Los Angeles.

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"The present recession in business has produced a condition of public mind which I regard as favorable to America's future prosperity. It has developed waste consciousness. Our general business is showing more than seasonable improvement and we look for a slow but definite recovery."—C. A. Dunham, President, C. A. Dunham Co., of Chicago, Illinois.

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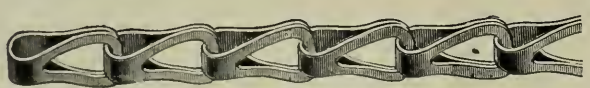

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See Page C-2928 Sweet's Catalog and Page 147 Specification Manual of the American Architect. Send for Catalog on Sash Chain.

CONTRACTORS—PURE AND IMPURE

By KENNETH M. MURCHISON in *The Forum*

The art of contracting for the erection of buildings has changed quite a bit since the World War. Commercialism is rearing its Medusa-like head more and more. New conditions have arisen, and the contractors, like all other good American citizens, must meet and conquer.

Besides having to be more efficient, more zealous and more omniscient than ever before, the modern contractor is, more often than seldom, called upon to assist in the financing of new projects. And he does it not only to clinch the job in the first place, but because he has found out that there is money in it for him.

He has become aware that under the old system the banker or the bond house or whoever hands out the wad, gets the most profit out of it, and he now affiliates himself with some responsible financial house with a look-in on some of the French dressing or gravy, or perhaps he does the banking.

Any contracting firm which can help out the owner of a piece of property by doing his secondary financing is in a much better position to get the job than is the pure but bankerless builder. And that is why I sometimes feel sorry for the small fellow who announces that he has started in the building game but who has not tied himself up with some mammonly partner. This kind of builder will have to content himself with small jobs, with alterations and with country houses, but that is not the way leaders in the contracting business think it should be prosecuted in these modern days. Unless he wants to be always a small contractor forsooth (and, by the same token, there will always be small jobs for the small contractors), the budding builder should either marry a girl whose old man is a retired capitalist and who believes in his son-in-law, or get somebody with a great roll of cash to help him over the jumps.

One of my friends is the head of a building corporation that earns its livelihood by competitive bidding. This young fellow is always busy; he is always excited; he is bidding on four or five things at the same time; and he is always losing a $200,000 job by $180! Or, in those delicious moments when he *is* the lowest bidder, the Board of Selectmen decides to take some of the alternates, and my friend again loses the job by $84.37!

But he likes it. The game is something like golf. There is always that ray of hope dangling before his eyes that he may do the next hole in three, or be able to hit the ball on the nose.

Those architects who try to put through a building operation by means of subcontracts are really entitled to the pity and sympathy of their confreres. In the first place, few architects are properly set up for such a project. Architects' superintendents are not building superintendents, and the building superin-

tendent that an architect gets to carry out a subcontract job is generally one of a crowd of floaters, which class of employes can get the architect into plenty of trouble.

It does not seem natural that an architect can do the actual construction work for a client at a saving which might offset the general contractor's fee. Certain it is that the architect, when he lets himself in for this sort of thing, is doing nothing but hunting trouble. Has he an estimating department? Is he *au courant* with the prevailing prices on all subcontracts? Has he any other jobs being done by the same subcontractors, so that the subcontractor may combine his superintendence and overhead on two jobs close to each other? Where is his transportation department? And who meets the general payroll each week?

The modern up-to-date American general contractor is entitled to the admiration of the architectural world for his capacity, his looking-forwardness and his faculty for administration.

When you come to analyze it, the administration of a speedy, complicated and difficult building operation is amazing. There are a myriad of things to contend with. Everything necessary to be delivered on a certain day is there that day. And the gang that handles it is there as well, overalls on, waiting for it. As to delivery of materials at the building, that too is more onerous than it used to be, because our street traffic no longer admits of great piles of brick and dirt and broken stone taking up half the roadway. The placing of the ground floor slab in jig time is of paramount importance, serving as it does a multiplicity of uses, one of which is to keep the architect from falling into the cellar.

Anyhow, taking it by-and-large, putting up a modern skyscraper or a big steel hotel in a few months' time is a man's job, and it belongs to the contractors, —not to the architects.

There is a great pile of dollars yet to be made in real estate and in buildings, and that is where the architect should take stock of himself and consider investing his surplus cash. Not in Wall Street, my brothers, where nobody knows what they're really doing until they are broke, but in city property which, if well situated, has comparatively little chance of declining in value. Then, in the development of that city property along well studied lines is where the architect should shine.

A few architects have taken advantage of their opportunities and have invested in building operation, but they could be counted, here in New York at least, on one's fingers. The rest of them, when they get anything laid up, either buy their wives chinchilla coats, or go downtown and ask their stock brokers to recommend something.

And what does a broker know? Nothing, my friends; or if not nothing, then next to nothing. "Rock Island is well thought of," or "Castor Oil is due for

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a rise," or "They're going to cut a melon in Transcontinental Food." That is the kind of stuff that is handed out to the prospect.

The builders who are also bankers can, as I said before, put over a deal with consummate ease compared to the contractors who have to go outside for their money. But they have to wear smoked glasses day and night. They are beset by propostions of every kind, propositions for which trusting architects have drawn up elaborate sets of drawings, added to which are the promotors' works of art in the way of financial set-ups.

But the questions of demand for space, junior financing, cubic cost, and other little items of interest and taxes, often turn themselves into such bacteria of troubles that the whole thing resolves itself into a total waste of time for all concerned. That seems to be the fate of 19 out of 20 projects which find their way into the developing room of a big building organization or an architectural office which has the reputation of going into deals.

Would you bring your boy up to be an architect? Well, I believe I would, if he exhibited any tendencies that way, and also, if I had one. He needn't expect to die rich, nor will he ever be the President of the United States, but he will have a good time out of life and should enjoy a reasonable happy social position.

But would I bring him up to be a builder? That is another matter. He would have to look up to, or pretend to look up to, the architects from whom he is trying to get a job, that might kill him off early in life. Then besides, he would probably be in a fight with the unions most of his life, and that is not so pleasant either. He is blamed for everything that they think the architect should be blamed for, and he always has to pay for some mistakes made by some mysterious draftsman.

Perhaps some day the big builders will swallow up the architects. This pretty how-d'ye-do has been a matter of discussion time and time again. A few big companies seem to get along very well with their own architectural forces, but one cannot help thinking that every once in a while a little bird's-eye viewing wouldn't do any harm.

There is no doubt that the big concerns, if they wanted to cut out the architects from their field of vision, could easily get very competent designers to head their departments for $15,000 or $20,000 a year,—perhaps less. The companies, however, with but a few exceptions, prefer to sidestep that question entirely, just like the politicians on the Prohibition question, and remain in a receptive mood to the blandishments of the architectural profession, to give or take as the case might be.

In the old days there used to be a feeling of distrust in the building industry between the architects and the contractors, but happily that condition is entirely a

thing of the past, and nowadays architects and builders may be seen walking hand in hand up Fifth Avenue and eating out of the same plates in low-priced restaurants.

A big contractor is something like a big chef. Does a big chef cook? He does not. He is a business man. It is his business to make the kitchen pay. And if it does not pay, it is up to the chef to find out why it doesn't pay and to stop up all the leaks. He might go up to the range occasionally to taste the sauces, and so might the big contractor go over to his buildings from time to time to see whether the job is moving along as it should move. But the big contractor need not necessarily be an expert builder. He is a financier, an organizer, a pusher, an analyst of men, a diplomat. It is he who is responsible for the tremendous stride of the building industry of the United States. Without his genius of organization and of driving capacity our great skyscrapers and mammoth commercial structures would not be possible today. If he had not devised ways of erecting these structures in ten or twelve months, the interest charges and fees would eat them up, and the projects would fall by the wayside.

HONOR FOR SEATTLE DRAFTSMAN

First prize in a total of 550 competitors was won by Lloyd J. Lovegren, draftsman in the office of William C. Brust, architect in the Republic Building, Seattle, in a competition by the Beaux Arts Institute of Design of New York. The subject was the design and rendering of a monastic chapel in the Rocky Mountains. The competition was open to departments of architecture in all American colleges and universities.

SOUTH SAN FRANCISCO THEATER

Plans have been completed in the office of Dodge A. Riedy, Pacific Building, San Francisco, for a $90,000 theater in South San Francisco for Charles E. Petersen. Construction will be of reinforced concrete. The auditorium will seat 1000. Mr. Riedy is completing plans for additions to the West Portal School, San Francisco, estimated to cost $142,000.

NO LIBRARY AUTHORIZED

The Oregon State Board of Architectural Examiners is not authorized by state law to acquire a reference library for use of students preparing for examination, the state attorney general holds in an opinion written at the request of the board. It was also held that the board is not permitted to conduct a contest for preparation of the best certificate.

STOCKTON THEATER

Preliminary plans have been prepared by Bliss and Fairweather, architects of San Francisco, for a Class A theater to be erected on Main Street, near American, Stockton, for the National Theaters Syndicate. The playhouse will seat 1500 and will cost $200,000.

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STATE LAW IN COLORADO

Definitions of certain acts forbidden by the Colorado state law regulating the practice of architecture, such as gross incompetency, reckless, dishonest, fraudulent or deceitful practice, have been incorporated in additional by-laws of the state board of examiners, adopted at a recent meeting. The text of the new by-laws follows:

"Defining certain acts which will be considered as gross incompetency, reckless, dishonest, fraudulent or deceitful practice within the meaning of the act.

"Failure to use diligence in preparing contracts or other documents for the protection of a client shall be deemed recklessness in the construction of a building. Failure to use due diligence in planning or supervising a structure, resulting in the building being improperly constructed, shall be deemed recklessness in construction.

"If failure to protect client in preparing contracts and other documents is due to causes other than lack of due diligence, it shall be deemed gross incompetency. If the planning or supervision of the construction of building by architect results in faulty or improper construction, said architect shall be deemed grossly incompetent.

"Any architect may be deemed guilty of dishonest practice if he pay any money or give anything of value to any officer or employee of the State of Colorado, or of any county, state, municipality or school district within said state, for aid and assistance in securing work from the political sub-

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"If an architect has secured a contract on any work, it shall be deemed dishonest practice for any other architect to attempt to supplant him so long as the contract be in force.

"It shall be deemed dishonest practice for any architect to stamp the drawings of another, or to stamp any drawings other than those made at his own office or under his personal supervision.

"It shall be deemed dishonest practice to publicly announce, or permit to be so announced appointment as architect for any project unless a definite agreement with the owner exists."

GOLDEN GATE BRIDGE

Bids for all the major construction features of the Golden Gate Bridge will be called for during April and May and will be opened about June 1. Announcement of this plan was made by the directors of the Golden Gate Bridge and Highway District, Financial Center Building, San Francisco, following their acceptance of the recommendations made by the chief engineer and the consulting board. The first call will include bids for the substructure for the main bridge, which will require three separate bids: (1) the two main piers; (2) the two anchorages; (3) a bid on the two items combined.

The steel superstructure will be included in item 2, on which three bids will be called; (1) the cables, suspenders and anchorage steel; (2) towers, stiffening trusses, floor sys-

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tem, steel approaches and all other steelwork between the anchorages; (3) a bid on the two items combined.

Item 3 will be the bids for the two approaches: (1) the Presidio road, including viaducts and accessory structures; (2) the Sausalito road, including viaducts and accessory structures.

All miscellaneous construction will be included in item 4, which will be let in six contracts: (1) paving of roadway floor of main structure and to the plaza; (2) the railing on the main structure; (3) lighting; (4) toll houses and plazas; (5) final painting coat; and (6) incidentals.

In order to allow ample time for coordination with the issues of the bonds, it is recommended that bids be asked for item 2 on April 1, item 1 on April 15 and item 3 on May 1, all of which will be opened on June 1. Bids will not be called for on item 4 until a later date, but an estimate of the cost of construction included in this item will be submitted on June 1st.

HOME BUILDING GROUP

Albert P. Greensfelder of St. Louis, president of the Associated General Contractors of America, has been advised by Secretary of Commerce Robert P. Lamont of his appointment as chairman of the construction committee of the White House Conference on Home Building and Home Ownership.

In a telegram of acceptance to Secretary Lamont, Mr. Greensfelder said: "Greatly appreciate appointment your letter twenty-ninth and will serve best of my ability as chairman committee on construction, President's Conference on Home Building and Home Ownership."

A. E. Horst, retiring president of the Associated General Contractors, was appointed last fall by President Hoover as a member of the planning and executive committees of the conference and at that time presented on behalf of the Association a comprehensive program for a general housecleaning within the construction industry.

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It is expected that the conference will soon get definitely under way and that as chairman of the construction section Mr. Greensfelder will urge many of the reforms recommended in the plan submitted by Mr. Horst, the keynote of which is the placing of the design, workmanship, appraisal and financing of construction upon a sound basis.

SAN FRANCISCO HEALTH CENTER

Construction will start this summer on the new $900,000 Health Center Building at the southwest corner of Polk and Grove Streets, San Francisco.

Sketches and floor arrangements by Samuel Heiman, architect, have been approved for the four-story granite addition to San Francisco's Civic Center.

In the scheme of eight health centers for the city, with the Civic Center Building as headquarters, a center is planned at the southeast corner of Alemany Boulevard and Onondaga Avenue. This will cost $65,000, will be a two-story brick and tile building, with the lower floor arranged as an emergency hospital and the upper floor a district health center. City Architect Charles H. Sawyer has prepared the plans. The Civic Center Building, for which Mr. Heiman is architect, will be built about the present Central Emergency Hospital and Detention Home.

The present "layout" plans for the Civic Center Building are as follows: First floor, central emergency hospital including wards and operating room, auditing department, birth and death records, vital statistics, dental and venereal clinic, child guidance department, secretary's office and publicity department.

Second floor: Communicable diseases clinic, food, milk, industrial, market and dairy inspectors, housing inspectors, epidemiologist, assistant health director, heart clinic, plumbing inspector, assembly room and gas appliance department.

Third floor: Health officer's suite, field nursing staff, child welfare de-

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ANENT THE NEW ARCHITECTURE

"Save in Germany and Scandinavia the New Architecture seems to be making very little progress. The traces of it that are visible in the current American skyscrapers are slight, and there are so few signs of it in domestic architecture and ecclesiastical architecture that when they appear they look merely freakish," says Henry L. Mencken in *The American Mercury*. "A new suburb built according to the plans of, say Le Corbusier, would provoke a great deal more mirth than admiration, and the realtor who projected it would probably be badly stuck. The advocates of the new style are full of earnestness, and some of them carry on in the shrill, pedagogical manner of believers in the Single Tax, the World Court or the New Humanism, but they do not seem to be making many converts. Not many persons have been persuaded that their harsh and melodramatic designs are either logical or beautiful, or that the conventions they denounce are necessarily meaningless and ugly.

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he abandon its noble and charming furniture for the ghastly imitations of the electric chair that the Modernists make of gas-pipe? I can find no reason in either faith or morals. The Eighteenth Century house fits a civilized man almost perfectly. He is completely at ease in it. In every detail it accords with his ideas. To say that the florid chicken-coops of Le Corbusier and company are closer to his nature is as absurd as to say that the tarpaper shacks behind the railroad tracks are closer to his nature.

"Nor is there any sense in the common contention that Gothic has gone out, and is now falsetto. The truth is that St. Thomas's Church not only represents accurately the mysticism of Ralph Adams Cram, who designed it, but also the evil conscience of the rich Babbitts who paid for it. It is a plain and highly intelligible signal to the world that, at least on Sundays, those Babbitts search their hearts and give thought to Hell. It is, in its sordid surroundings, distinctly otherworldly, just as Bishop Fulbert's cathedral was otherworldly when it began to rise above the medieval squalor of Chartres, the otherworldliness is of the very essence of ecclesiastical architecture. The moment it is lost we have the dreadful 'plants' that barbaric Baptists and Methodists erect in the Pellagra and Goitre Belts. Of all forms of visible otherworldliness, it seems to me, the Gothic is at once the most logical and the most beautiful. It reaches up magnificently—and a good half of it is palpably useless. When men really begin to build churches like the Bush Terminal there will be no religion any more, but only Rotary. And when they begin to live in houses as coldly structural as step-ladders they will cease to be men, and become mere rats in cages."

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